UNIVERSITY OF MARYLAND AT BALTIMORE

University of Maryland School of Medicine 1994-1995

THE OATH OF HIPPOCRATES

I do solemnly swear by that which I hold most sacred that I will be loyal to the profession of medicine and just and generous to its members. That I will lead my life and practice my art in uprightness and honor. That into whatsoever house I shall enter it shall be for the good of the sick to the utmost of my power. I hold myself aloof from wrong, from corruption, from the tempting of others to vice. That I will exercise my art solely for the cure of my patients, and will give no drug, perform no operation for a criminal purpose even if solicited, far less suggest it. That whatsoever I shall see or hear of the lives of men which is not fitting to be spoken, I will keep inviolably secret. These things I do promise and in proportion as I am faithful to this my oath, may happiness and good repute be ever mine; the opposite if I shall be forsworn.

The University of Maryland at Baltimore is accredited by the Middle States Association of Colleges and Schools. The School of Medicine is accredited by the Liaison Committee on Medical Education, the accrediting body for the Association of American Medical Colleges and the American Medical Association.

UNIVERSITY OF MARYLAND
AT BALTIMORE

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
University of Maryland at Baltimore
655 West Baltimore Street
Baltimore, Maryland 21201-1559

Admissions Office: 410-706-7478

The University of Maryland at Baltimore is actively committed to providing equal educational and employment opportunity in all of its programs. It is the goal of the university to assure that women and minorities are equitably represented among the faculty, staff and administration of the university, so that its work force reflects the diversity of Maryland's population.

All employment policies and activities of the University of Maryland at Baltimore shall be consistent with federal and state laws, regulations and executive orders on nondiscrimination on the basis of race, color, religion, age, ancestry or national origin, sex, sexual orientation, handicap, marital status and veteran status. Sexual harassment, as a form of sex discrimination, is prohibited among the work force of the university.

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Profile

Established in 1807, the University of Maryland School of Medicine is the fifth oldest medical school in the United States and the first to institute a residency training program. The School of Medicine was the founding school of the University of Maryland, and today it is an integral part of the 11-campus University of Maryland System. On the University of Maryland at Baltimore campus, the School of Medicine serves as foundation for a large academic health center that combines medical education, biomedical research, patient care and community service. While its traditional excellence remains constant, the School of Medicine and its national reputation continue to grow.

The School of Medicine boasts the oldest building in the Western hemisphere in continuous use for medical education, the meticulously restored Davidge Hall, built in 1812. The 14-floor Bressler Research Building and the nine-floor Medical School Teaching Facility, two major classroom and laboratory buildings, were completed within the past 18 years. The mid-rise Biomedical Research Facility was completed in late 1992. Under construction and scheduled for opening in 1995, the Health Sciences Facility is a new research and teaching facility providing an additional 83,570 net square feet, with the School of Medicine occupying approximately 80,000 net square feet. This new facility will provide the much-needed connection of the Medical School Teaching Facility to Howard Hall and the Bressler Research Building. With completion of the Health Sciences Facility, all major medical school research buildings will then be physically linked to the University Hospital and the new Veterans Affairs Medical Center.

The University of Maryland at Baltimore campus continues to expand as well. A state-of-the art Veterans Affairs Medical Center, immediately adjacent and connected by bridge to the University of Maryland Medical System (University Hospital), opened in 1993. The Gudelsky Tower, a new University Hospital patient tower, opened in 1994, and a new facility to house the ever-expanding Health Sciences Library is in the planning stage.

THE UNIVERSITY OF MARYLAND AT BALTIMORE

The University of Maryland at Baltimore, designated "UniversityCenter" by the city of Baltimore administration, is the founding campus of Maryland's public university system and a thriving center for life sciences research and community service. Seven graduate and professional schools—the Dental School and Schools of Law, Medicine, Nursing, Pharmacy, Social Work and the Graduate School—together with the University of Maryland Medical System, its Cancer Center, R Adams Cowley Shock Trauma Center, Institute for Psychiatry and Human Behavior and the Baltimore Veterans Affairs Medical Center—educate research scientists and many of the region's health care, law and social work practitioners.

With $103 million in sponsored program support in FY '94, UMAB is one of the fastest growing biomedical research centers in the country. The University of Maryland at Baltimore is ideally configured to maximize collaborative opportunities with government agencies in tackling complex health care, public policy and societal issues. Its location within the Baltimore-Washington-Annapolis triangle—at the hub of one of the greatest concentrations of health care institutions, research facilities, government agencies and professional associations in the nation—offers a unique combination of strengths to comprehensively address regional problems with the resulting conclusions having the potential for

global implications. Areas of multidisciplinary research, scholarship and community action include AIDS, aging, schizophrenia, hypertension, lead poisoning, cancer, child abuse and homelessness, offering students a wide selection of field experiences.

New partnerships among university components and with the University of Maryland Medical Center and Veterans Affairs Medical Center continually strengthen interdisciplinary research, education and service endeavors.

MILESTONES

The foundations of the School of Medicine date back to 1789 with the organization of the Medical Society of Baltimore. Baltimore physicians were decreasing in number after the Revolutionary War and, foreseeing the possibility of charlatans practicing the art of medicine, they began to train young physicians to succeed them. The founders of the medical society began instruction in anatomy, surgery and chemistry for prospective physicians in their own homes. There was strong citizen protest of anatomical dissection and soon the physician-teachers petitioned the Maryland State Legislature to establish a college of medicine on a firm basis and under the protection of the law. On December 18, 1807, a charter incorporating the College of Medicine of Maryland was approved by the Maryland Assembly.

The fledgling "College of Medicine of Maryland" was in need of a proper building, and on January 20, 1807, an act was passed authorizing a lottery—not to exceed $40,000—for the benefit of the medical college's building fund. Over the next 15 years, seven more lotteries were authorized to benefit the school.

Dr. John Beale Davidge, a native Marylander and a physician trained in Scotland, became dean and took the chair in surgery. His founding faculty were Dr. James Cocke (anatomy and physiology), Mr. James Shaw (chemistry) and Dr. Nathaniel Potter (theory and practice of medicine). From Col. John Eager Howard, a Revolutionary War hero and former Maryland governor, Davidge, Shaw and Cocke bought land that was "quite some distance from town" to protect against unruly mobs who had demolished the doctors' first anatomical theater in violent opposition to the dissection of human cadavers. From the school's very beginning there was strong emphasis on bedside teaching. The first class of

seven received clinical instruction at the Baltimore Almshouse, a warehouse, a theater and infirmary for the poor.

Davidge Hall was designed by Robert Carey Long Sr. and modeled after the Pantheon in Rome. It was completed in 1812. The first classes were held in the new building in 1813, the same year the College of Medicine of Maryland became the University of Maryland. In addition to two expansive circular amphitheaters, one atop the other, Davidge Hall was built with dissecting cubbyholes, secret stairways and hidden exits that afforded early students and their professors safe passage from angry mobs. It is said that the 1812 British bombardment of Fort McHenry was viewed from the veranda of Davidge Hall, while a few miles away Francis Scott Key was writing the "Star Spangled Banner." Davidge Hall was meticulously renovated in the early 1980's.

The Baltimore Infirmary, forerunner of the University of Maryland Hospital, was built opposite Davidge Hall in 1823, on the site of the present Baltimore Student Union. It was the first hospital founded by a medical school for the express purpose of clinical instruction. It was also the site of the first intramural residency program established in the United States. Senior medical students lived in the hospital while helping to care for patients. The building was still in active use until 1973, when its clinics were moved into the newly constructed north-wing addition to the University of Maryland Hospital and the old building razed.

In curriculum development, the School of Medicine claims a long and proud tradition as an innovative leader. Maryland was the first to recognize the value of the basic sciences. In 1800, Dr. John Crawford, whose personal library became the nucleus of Maryland's medical library, was the first to vaccinate Baltimoreans against smallpox. As early as 1810 he had presented evidence of the contagious character of tuberculosis. In 1833 the school introduced the first preventive medicine course.

The techniques of auscultation and percussion were taught at the School of Medicine for the first time in Baltimore as early as 1841, and in 1844 Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland. In 1848 Maryland became the first school to require anatomical dissection, followed six years later by the introduction of compulsory courses in gross and microscopic pathology. Compulsory courses in experimental physiology and microscopy were introduced six years later. A milestone in cancer research occurred in 1853, when Maryland's Dr. Francis Donaldson became

the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867) and diseases of the eye and ear (1873).

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 enabled the school to expand its clinical facilities and faculty. Early in the twentieth century, Drs. James Rowland and Louis Douglas initiated off-site obstetrical care and home delivery, prenatal clinics and an Rh blood typing laboratory, significantly improving infant and maternal health.

The School of Medicine has had its share of medical breakthroughs, including in more recent decades discovery of the thyrotropic hormone, the first successful antibiotic treatment of Rocky Mountain spotted fever, the first specific cure for typhoid fever and the successful treatment of diabetic keto-acidosis with low dose insulin. In 1967 the school began one of the first formalized family practice residency programs in the country.

The R Adams Cowley Shock Trauma Center, which opened in 1961, serves as a worldwide model for emergency medical treatment. The University of Maryland Cancer Center is a strong participant in new drug development and research, and virtually every important drug in use in oncology today has been tested in this program.

The rest, of course, is not yet history, but this institution's history indeed continues to be written.

EDUCATION

The School of Medicine will initiate a new curriculum with the August 1994 entering freshman class. The new curriculum is different from the previous, more traditional curriculum in the following areas: the basic sciences will no longer be taught as discipline-specific "courses" but will be integrated and taught as "blocks," using interdisciplinary teaching with both basic and clinical science teachers. Committees chaired by faculty members from major block courses will determine course content and teaching methodologies. Lectures, small discussion groups and laboratories will be used with extensive time available for self-learning. Problem-based learning will be tested in several blocks during the 1994-95 academic year with the intention of more widespread use in the 1995-96 freshman year. The sophomore year also will use the interdisciplinary "blocks" approach as the freshman class

moves into the second-year curriculum in 1995-96. There will be a marked reduction in contact hours with an emphasis on independent study with availability of mentors and learning resources. Another major change will be a half-day course dedicated to the Introduction to Clinical Practice which will begin at the inception of the freshman year and continue throughout the first two years. This course will include instruction in interviewing techniques, physical examination, intimate human behavior, ethical issues and the dynamics of ambulatory care delivery. Much of this two-year longitudinal experience will be off-site in clinical settings. Changes within the last two years beginning in 1996 will include a mandatory ambulatory month rotation in Family Medicine, emphasis on ambulatory teaching in all other clinical rotations, and a longitudinal half-day experience in a clinical setting in which the student will have continuity of care for patients and families.

The advisory system will continue with each student having a basic science and a clinical science advisor when possible.

The ties between the medical school and the hospital enrich and enhance both medical education and health care. All physicians practicing at the University of Maryland Medical System and the Medical Faculty Foundation Professional Building have School of Medicine faculty appointments and are actively involved in the educational process in addition to supervising residency training for more than 600 postgraduate positions at the University Hospital and affiliated hospitals. The Medical System includes a 747-bed teaching hospital, Cancer Center and R Adams Cowley Shock Trauma Center on campus, as well as the Montebello Rehabilitation Center and the James Lawrence Kernan Hospital off campus.

Medical care and education are further enhanced by the relocation of the Baltimore Veterans Affairs Medical Center to this campus in a new state-of-the-art hospital adjacent to the School of Medicine and the University Hospital. Together, these facilities serve as the major clinical training sites as well as a source of comprehensive health care for the local community and the state. The school also has established clinical affiliations throughout the region, giving students unusual flexibility in clinical experiences.

In an effort to nurture more interest in basic research and to meet the increasing demand for physician-scientists, the school offers a combined MD/PhD program in 10 medical disciplines and an MD/MS program in preventive medicine. Although the schedule can be flexible, MD/PhD students typically complete the freshman and sophomore years of

medical school, enroll as graduate students and then begin their clinical clerkships. Combined MD/PhD degree studies can be completed within six-to-eight years.

Medical students in the track leading to the MD/MS in preventive medicine may complete the dual-degree program in five years. The fifth year is counted fully as one year of preventive medicine residency training by the American Board of Preventive Medicine.

Graduate programs are offered at the master's and doctoral levels in the basic sciences. There is a baccalaureate program in medical and research technology and a master's program in physical therapy as well as a number of interdisciplinary programs with both service and research components. Continuing education programs are sponsored for practicing physicians.

The School of Medicine offers students an excellent spectrum of resources and field experiences. Located along the Baltimore-Washington corridor, the school is in the midst of a great concentration of health care institutions, research centers, government agencies and professional associations.

RESEARCH

The University of Maryland School of Medicine is one of the country's fastest growing research institutions, with total awards of $86.3 million in FY '94. Maryland is the only medical school in the nation to receive two Health Careers Opportunities Program (HCOP) awards, a Centers of Excellence (COE) award and a Fogarty International Minority Training Program award in one year. We are one of only eight institutions nationwide to receive a Center for Minority Health Research Grant, and we hold two Patient Outcome Research Trial (PORT) awards, with funding exceeding more than $12 million.

In the last few years the school has led the nation's public medical schools with the highest percentage increase in National Institutes of Health (NIH) funding, with six departments ranking among the top 10 in the country for NIH funding of public medical research programs: epidemiology and preventive medicine; physiology; neurology; obstetrics and gynecology; pathology and psychiatry. Two of those departments, epidemiology and preventive medicine and physiology, rank in the top 10 in funding of all the nation's 126 public and private medical schools.

That funding, combined with the expertise and cutting-edge research of the school's life scientists, has produced some remarkable breakthroughs:

- discovery that ouabain, a human hormone, is linked to hypertension
- development of formestane, a drug that combats recurrent breast cancer by denying tumors the estrogen they need to grow
- a genetically engineered cholera vaccine
- a test allowing earlier detection of the AIDS-causing HIV virus
- led multicenter research studies in proving efficacy of beta interferon as a treatment for multiple sclerosis

In the last several years the school has produced more than 100 invention disclosures and nearly 40 patents, establishing Maryland as a hub for life sciences activity in the

region. Technologies developed at the School of Medicine have formed the basis for at least five Baltimore-area companies.

Other research projects are examining how intervention can make a difference for inner city youngsters trying to avoid the perils of HIV infection, drug use and street violence. Another project is tracking how intensive outreach can keep trauma victims from becoming repeat shock trauma patients.

COMMUNITY SERVICE

The School of Medicine's most important mission continues to remain the same after nearly two centuries, that of educating men and women to meet the health care needs of the people of Maryland and beyond. The School of Medicine is a vital part of the west Baltimore neighborhood in which it resides, and its faculty, staff and students are increasingly involved in activities that affect our neighbors.

Each year the School of Medicine students provide hundreds of thousands of hours of service in hospitals, clinics, homeless shelters and schools throughout the state. Program involvement includes:

- S.T.O.P. AIDS—Student/Teacher Outreach Program—sends volunteer students into Baltimore City Public School sixth grades to discuss HIV prevention.

- The Health Care and Homeless Project—allows students to spend time at homeless shelters providing health care screening and education.

- Sexual Assault Course— enables students to provide counseling and advocacy for sexual assault victims who come into the emergency room.

Many faculty members also provide millions of uncompensated dollars in primary and preventive care to the residents of Baltimore through programs such as:

- Housecall—physicians visit elderly individuals in their homes and provide medical treatment and follow-up care.

- Families-in-Transition—health care for homeless children and their families. The program provides comprehensive evaluation and case management of physical and mental health needs.

- Paquin Family Health Center—a school-based health center at Paquin High School, Baltimore City's school for pregnant young women and teen mothers. Total health care from Ob/Gyn, pre- and post-natal care and psychosocial support is provided for these young women and their children.

THE CAMPUS AND BEYOND

The School of Medicine is an integral part of one of the country's first centers for professional education and research. Its 32-acre urban campus, shared with six other professional schools, the University of Maryland Medical System and the Baltimore Veterans Affairs Medical Center, also hosts the Hope Lodge and Baltimore Ronald McDonald House, both offering low cost housing and a home-atmosphere for pediatric and adult outpatients and their families receiving medical treatment in the Baltimore area.

Opportunities abound for faculty and students to join with other health and human service professionals in interdisciplinary study, informal discourse and collaborative clinical practice and research, offering students a wide selection of field experiences.

In addition to professional opportunities, the city of Baltimore offers a stimulating environment in which to live and study. Baltimore residents enjoy the sophistication of a large metropolitan city combined with easy accessibility to surrounding mountains, beaches and rural areas. The many attractions and resources of Washington, D.C. are less than a one-hour drive from Baltimore.

Having been the setting for significant events in the history of our country and a renowned foreign-commerce seaport, Baltimore maintains a strong feeling of the past, typified by the many charming neighborhoods of restored houses and an abundance of historic monuments and buildings. Within easy walking distance of the campus is the nationally acclaimed Inner Harbor area where Harborplace, the National Aquarium and the Maryland Science Center and other facilities share the festival atmosphere of the harbor with hotels, shops and restaurants, water taxis, pleasure and tour boats and a wide variety of fre-

quently visiting international ships. Restored and newly constructed townhouses and condominium complexes share the waterviews, excitement and atmosphere of downtown living.

Warm weather months signal festival time in Baltimore with such offerings as Artscape, the Baltimore City Fair and the many ethnic festivals that celebrate the city's diverse populations. As a cultural center, Baltimore has offerings to please the most discriminating, including a world-class symphony orchestra, excellent museums and libraries, professional theater, ballet and opera.

For sports fans, Baltimore boasts a varied menu. Oriole baseball, CFL football, indoor soccer and ice hockey, collegiate and club lacrosse, horseracing and steeplechase in the suburban counties are some of the offerings. The new home of the Baltimore Orioles, Oriole Park at Camden Yards, is but a two-block stroll from the University of Maryland at Baltimore campus. The nearby Chesapeake Bay offers unparalleled opportunities for boating enthusiasts and water sportsmen. Gastronomy aficionados will delight in experiencing the seafood for which the region is famous.

Admissions Information

APPLICATION

The University of Maryland School of Medicine is a participant in the American Medical College Application Service (AMCAS). All requests for a place in the first-year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 201, 2450 N Street, N.W., Washington, D.C. 20037-1131, or from the Committee on Admissions, School of Medicine, University of Maryland at Baltimore, 655 West Baltimore Street, Baltimore, Maryland 21201-1559. In addition, they are usually available from the premedical advisory office at the undergraduate college. AMCAS application material is ready for distribution about mid-May of the year in which an individual plans to submit an application to the School of Medicine.

For the School of Medicine, the AMCAS application is the first of a two-stage application process and is due in Washington by November 1. The Committee on Admissions thoroughly reviews the AMCAS application and, based on the information contained in it, determines whether the second stage (School of Medicine) application form will be sent. An application fee ($40) payable to the University of Maryland School of Medicine is sent only with submission of the second stage application form, which is due by December 1. All applicants who are determined to be residents of the state of Maryland are invited to submit a second-stage application. Nonresidents will either be sent second-stage application material or will be informed that the Committee on Admissions cannot continue the application process.

The application form and supporting credentials should be filed as early as possible in the application period. Please do not have supporting credentials sent prior to submission of the second-stage application.

The applicant must assume responsibility for assuring that all required credentials and the completed application packet are filed with and received by the Committee on Admissions. The applicant is expected to respond truthfully and completely to all questions on the AMCAS and School of Medicine application forms. An applicant who provides false or misleading information may be denied admission or, if enrolled before discovery of irregularity in the application process, may be dismissed from the school.

EARLY DECISION PROGRAM

The University of Maryland School of Medicine has an Early Decision Program for applicants who are sure that their first choice of medical schools is the University of Maryland. The Committee on Admissions interviews selected early decision applicants and makes a decision on these students before considering the regular pool of applicants. By applying for early decision, the highly qualified applicant avoids having to make numerous other applications. Applicants with less competitive academic credentials, or those without the support of their premedical advisor, are discouraged from applying through this program.

The early decision applicant must apply only to this school by the AMCAS deadline of August 1. Applicants must provide all supplementary information by September 1. Interviews will take place at the medical school between mid-August and late September.

No one will be accepted without an interview. If offered a place by this school, the applicant cannot apply elsewhere. All decisions for this program are made by October 1.

The Committee on Admissions can make one of three decisions for each early decision applicant: 1) acceptance; 2) rejection; or 3) placement into the regular applicant pool for review at a later time. Each applicant will be notified promptly of the Committee on Admissions' decision so that those not accepted through this program can apply elsewhere.

Individuals who apply through the Early Decision Program cannot apply to any other medical school until they are notified that they have not been accepted through this program at the University of Maryland.

APPLICANT SELECTION CRITERIA

Academic achievement, extracurricular activities, personal characteristics, recommendations from the premedical committee or college instructors, scores on the Medical College Admissions Test (MCAT) and personal interview all are considered in the committee's evaluation of an applicant. Academic achievement and/or high MCAT scores do not in themselves ensure acceptance. Of significant concern to the Committee on Admissions are the applicant's character, personality and potential to perform as a medical student and as a future physician. Personal integrity, emotional maturity and stability, motivation, interests and activities outside the classroom and interpersonal and communication skills are all carefully evaluated. Candidates must be proficient in both written and spoken English.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. Preference in the selection process is given to residents of the state of Maryland. Applications can be processed only from citizens of the United States and Canada or from individuals who reside in this country on a permanent resident visa. Occasionally an applicant residing in the United States holds a visa permitting him/her to live in the United States indefinitely and to establish residency in one of the states. Applications are accepted from these individuals. Those on a time-limited visa, such as a student visa, are not eligible for admission to the School of Medicine.

ADMISSION TO THE FIRST-YEAR CLASS

The student should plan a four-year undergraduate curriculum with a suitable arts or science major leading to a bachelor's degree. The Committee on Admissions encourages all applicants to pursue a course of study that is rigorous, scholarly and focused on areas that are intellectually challenging and interesting to the applicant. The Committee on Admissions seeks to admit students with diverse academic backgrounds.

A minimum of 90 semester hours of acceptable college credit is required, exclusive of physical education and military science. These must be earned in colleges or universities whose names appear on the current list of Accredited Institutions of Higher Education as compiled by the National Committee of Regional Accrediting Agencies of the United States. The only courses accepted are those that are approved for credit towards a degree by the university or college attended. Preparation at a foreign college or university must be supplemented by a year or more of work in an approved university or college in the United States.

Successful completion of the following courses and credits is required prior to matriculation at the School of Medicine.

	Semester Hours
Biological sciences	8
General chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited junior colleges and then, only if these credits are validated by a college offering a Bachelor of Arts or Science degree. Advanced placement credits for science courses taken in high school may be accepted if the applicant's college (which grants the bachelor's degree) has given college credit for those courses. Other exceptions may be granted at the discretion of the Committee on Admissions.

Selected students who enter the School of Medicine from colleges that usually grant a baccalaureate degree after the successful completion of the first year of medical school are responsible for: (1) providing a certificate from the college or university certifying eligibility for this degree; and (2) meeting all requirements of the School of Medicine for advancement to the second year.

The MCAT must be taken no later than fall of the year preceding the desired year of entrance and must be taken within three years of the anticipated date of matriculation. Applicants should write to the MCAT Program Office, 2255 North Dubuque Road, P.O. Box 4056, Iowa City, Iowa 52243, for further information and registration forms, or to the Committee on Admissions.

A letter of recommendation from the undergraduate premedical committee or an officially designated premedical advisor is required. If the applicant's undergraduate college or university does not have a premedical committee or advisor, three letters of recommendation are required from faculty who have taught the applicant. Two of these letters must come from instructors who have taught the applicant in the sciences. Applicants who have earned advanced degrees or who have been out of school for a significant length of time should submit a letter of recommendation from each component of their education or major

work-related experience. Letters of recommendation should be submitted by individuals qualified to evaluate the applicant's accomplishments, productivity and character in an objective and critical manner. All letters of recommendation should be sent directly to the Committee on Admissions. They are not to be sent to AMCAS.

Each applicant's credentials are evaluated by the Committee on Admissions to determine if an interview is to be granted. All interviews are conducted at the University of Maryland School of Medicine. These interviews are scheduled in advance by invitation.

In its selection process, the Committee on Admissions must use the applicant's residency status that is in effect on the last day applications can be received (December 1). The University of Maryland at Baltimore office of records and registration is responsible for all decisions regarding residency. All questions, complaints and appeals regarding residency status should be directed to that office: 621 West Lombard Street, Baltimore, Maryland 21201-1575; 410-706-7480, not to the School of Medicine Office of Admissions. Nonresidents who matriculate at the School of Medicine should plan to maintain that status throughout the four years of medical school. Current standards for reclassification to in-state status are rigorous and make reclassification difficult.

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements," which can be obtained from:

Association of American Medical Colleges
Suite 201
2450 N Street, N.W.
Washington, D.C. 20037-1131

ADVANCED STANDING

Students who have attended medical school in the United States are eligible to file application for admission to the second- and third-year classes only. Applications must be submitted between January 1 and May 1 of the desired year of admission. Applicants for advanced standing must meet all of the current first-year entrance requirements and must present acceptable medical school credentials and a medical school record based on courses that are equivalent to similar courses in this school. The applicant must have taken the

MCAT examination and completed the undergraduate prerequisites. Applicants for admission with advanced standing to the year III class also are required to take and pass Step I of the United States Medical Licensing Examination.

No student who has been dismissed from any medical school will be considered, unless his/her former dean submits a letter addressed to the Committee on Admissions confirming that the student has been reinstated in good standing and is eligible for promotion. No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree Doctor of Medicine cannot be admitted to the medical school as candidates for that degree from this university. This is true for both advanced standing and first-year applicants. Individuals whose graduate work has been in the fields of dentistry, osteopathic medicine or podiatric medicine are not candidates for advanced standing.

Citizens of the United States who are studying medicine in foreign medical schools may apply for admission to the year III class only. Application must be made no later than May 1 of the desired year admission. Applicants for advanced standing must meet all of the first-year entrance requirements, including the MCAT examination and undergraduate prerequisites, and submit acceptable medical school credentials as well as a medical school record based on courses equivalent to similar courses in this school. Students in foreign schools must take and pass Step I of the United States Medical Licensing Examination.

Financial Information

DETERMINATION OF IN-STATE STATUS

An initial determination of in-state status for admission, tuition and charge-differential purposes will be made by the university at the time a student's application for admission is under consideration.

The University of Maryland at Baltimore *Policy for Student Residency Classification for Admission, Tuition and Charge-Differential Purposes* was changed effective with the fall 1991 semester. There are several significant changes in the criteria for determining eligibility for in-state status. Students currently classified as nonresidents are encouraged to review the new policy. Copies of the policy are available at the registrar's office, office of records and registration, room 326, Baltimore Student Union, (410) 706-7480.

TUITION AND FEES FOR 1995-1996

	PER SEMESTER	PER YEAR
Application Fee/Matriculation Fee *	—	$ 40.00
Tuition—In-State	$ 5,375.50	10,751.00
Tuition—Out-of-State	10,425.50	20,851.00
Student Activities Fee	31.00	62.00
Student Health Fee	40.00	80.00
Hospital Insurance (Individual) **	438.00	876.00
Student Liability Insurance ***	—	175.00
Supporting Facilities Fee	99.50	199.00
Academic Service Fee	5.00	10.00
Dormitory Fee **** Contact Housing	1,275.00	2,550.00
Graduation Fee—Seniors	—	35.00
Student Government Fee	7.50	15.00
Hepatitis Vaccine (First Year)	—	140.00
Late Payment Fee 5% or $100.00 Maximum		

** An application fee of $40 should be submitted with the formal application to the School of Medicine. This fee will be applied against the matriculation fee for accepted students. A partial tuition prepayment may be required before matriculation.*

*** Hospital insurance is required of all full-time students. A brief outline of the student health insurance program is furnished each student. Students with equivalent insurance coverage must provide proof of such coverage by September 15 for fall registration and by February 15 for spring registration to Student and Employee Health at the time of registration to obtain a hospital insurance waiver. Rates quoted are subject to change.*

**** Student liability (malpractice) insurance is required of all students.*

***** Rate based on 10-month year. Transient rates available for summer.*

FEES

The *application and/or matriculation fee* partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

The *tuition charges* meets a portion of the costs for the educational program and supporting services.

Student activities fees are used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association, in cooperation with the Dean's Office, recommends expenditure of the fees collected. A student health fee is charged to help defray the cost of providing health services, which include routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

The supporting facilities fee is used in support of the expansion of various facilities on campus that are not funded or are partially funded through other sources.

The academic service fee covers transcripts for life.

Diploma fees are charged to help defray costs involved with graduation and commencement.

All checks and money orders should be made payable to the University of Maryland for the exact amount of the actual bill.

A service charge is assessed for dishonored checks. It is payable for each check returned unpaid by the drawee bank because of insufficient funds, stopped payment, postdating or if it has been drawn against uncollected items.

- For checks up to $24.99—$5

- For checks from $25 and up—$25

Late registration fees defray the cost of the special handling involved for those who do not complete their registration on the prescribed days. No diploma, certificate or transcript will be issued to a student until all financial obligations to the university have been satisfied.

The university reserves the right to make such changes in fees and other charges as may be necessary.

REGISTRATION

To attend classes at the University of Maryland at Baltimore campus it is necessary to process an official registration. All students are required to register each term in accordance with current registration procedures. The balance of tuition and fees is due and payable on the dates specified for registration. Registration is not completed until all financial obligations are satisfied. Students who do not complete their registration, including the payment of their bill on the registration days, will be subject to a late registration fee.

Courses taken concurrently with a University of Maryland at Baltimore registration at another campus or institution must have program approval in advance by the appropriate University of Maryland at Baltimore officials. Off-campus registration forms are available in each dean's office and in the office of records and registration.

Although the university regularly mails bills to advance-registered students, it cannot assume responsibility of their receipt. If any student does not receive a bill prior to the

beginning of a semester in which he or she has advance-registered, it is that student's responsibility to contact student accounting, Administration Building, during normal business hours.

Students who arena-register or advance-register and subsequently decide not to attend UMAB must notify the office of records and registration, room 326, Baltimore Student Union, in writing, prior to the first day of instruction. If this office has not received a request for cancellation by 5:00 p.m. of the last day before instruction begins, the university will assume the student plans to attend and accepts the financial obligation.

After classes begin, students who wish to terminate their registration must submit an application for withdrawal to the office of records and registration. Students are liable for all charges applicable at the time of the withdrawal.

If a satisfactory settlement or agreement for settlement is not made with the business office within 10 days after a payment is due, the student is automatically barred from attendance at classes and will forfeit the other privileges of the School of Medicine.

WITHDRAWAL

Students who wish to leave the School of Medicine at any time during the academic year are required to file a letter of resignation with the dean. In addition, an Application for Withdrawal form bearing the proper signatures must be filed with the office of records and registration. The student must satisfy the authorities that he or she has no outstanding obligations to the school and must return his or her student identification card.

If the above procedures are not completed, the student will not be entitled to honorable dismissal and will forfeit the right to any refunds to which that student would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is signed by the dean.

ACADEMIC STANDING

Students who voluntarily withdraw during an academic semester will be given no credit. Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the office of records and registration. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been made with the dean's written consent.

REFUNDS

Students officially withdrawing from the school will be credited for all academic fees charged to them less the matriculation fee, in accordance with the following schedule from the date instruction begins:

- Two weeks or less 80 percent
- Two to three weeks 60 percent
- Three to four weeks 40 percent

- Four to five weeks 20 percent
- After five weeks 0 percent

LEAVES OF ABSENCE

Students who are in good standing may be granted one year's leave of absence on request of the dean. Longer leaves can be arranged only under special circumstances with the exception of those students in the combined MD/PhD program.

REQUIRED EQUIPMENT

Dissecting Instruments: At the beginning of the first year, all freshmen must possess a complete set of dissecting instruments similar to those on display at the campus bookstore.

Microscopes: All freshmen also must provide for themselves a standard microscope. All microscopes must conform to the following specifications:

- Binocular
- 10X oculars (wide field oculars are recommended, but not required)
- Quadruple nose piece
- Four parfocal objective lenses:
  30 mm., 4X, 0.1 N.A.
  16 mm., 10X, 0.25 N.A.
  4 mm., 43X, 0.65 N.A.
  1.8 mm., 97X, oil immersion, 1.25 N.A.
- Mechanical stage to accommodate standard size microscopic slides (the stage need not be graduated)
- Light source (built-in on base is preferable)
- Substage condenser
- A carrying case (recommended)

Students are cautioned about purchasing used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition. Second-hand microscopes should be approved by the department prior to purchase.

Based on the determination of financial need, first-year medical students may qualify for loan of a microscope.

Other Equipment: By the second year, medical students are required to have an ophthalmoscope, otoscope, a blood pressure cuff and stethoscope. The estimated cost of these items, plus other essentials such as lab coats, is $400 to $450.

FINANCIAL ASSISTANCE

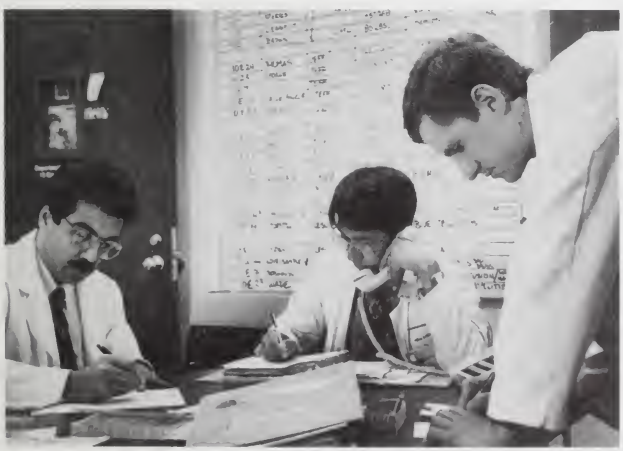
The School of Medicine's financial aid program is available to medical students who demonstrate financial need. Aid programs are centrally administered by Student Financial Aid, located in the Baltimore Student Union. To qualify for aid, students must apply annually and continue to meet certain eligibility requirements. Call student financial aid or stop by for fact sheets with detailed information on the application process and types of aid available.

Aid packages often include a combination of loans, grants, scholarships, and part-time employment designed to meet 100 per cent of a student's needs. In addition to school resources, outside funding agencies make financial assistance available to qualified medical students. Priority filing date is March 15.

Entering students may request financial aid applications from either the Committee on Admissions or the student financial aid office. Students currently enrolled in the School of Medicine may obtain forms from:

Student Financial Aid Office
University of Maryland at Baltimore
621 West Lombard Street, Room #334
Baltimore, Maryland 21201-1575
410 706-7347

Student assistance is awarded on the basis of demonstrated financial need. Eligibility for financial aid is dependent upon the student maintaining good academic standing. When determining the amount to be awarded, the following are considered: (1) income, assets and resources of the student and student's family; (2) support available to the student from nonuniversity sources and (3) the costs reasonably necessary for full-time attendance at the school.



Medical School Funds
University Grants: Preference is given to Maryland residents.

Dean's Scholarship: Funds provided the school are awarded primarily to nonresident students.

Desegregation Grants: Black students are eligible for these funds. Desegregation grants are normally used to reduce the amount of loan included in the financial aid award.

Medical Alumni Association: Interest-free loans are available to students on the basis of financial need.

Federal Work-Study: The Federal Work-Study Program provides jobs for students who need financial aid and who choose to earn part of their educational expenses. Jobs are arranged either on or off campus with a public or private nonprofit agency. Eligible students may be employed for as many as 20 hours per week. To be eligible for Federal Work-Study a student must apply for financial aid and demonstrate financial need.

Private and Endowment Funds: From bequests and private donations, the School of Medicine has established private and endowment accounts to provide fellowships, scholarships and loans for students on the basis of their academic achievement and financial need. The amounts of these fellowships, scholarships and loans vary and are awarded on an annual basis in accordance with school policy.

The availability of support from each of the funds listed below is dependent upon the income generated. Moreover, since many of the funds are governed by specific provisions set forth by the donors, awards must be made accordingly.

Scholarships
APPM Auxiliary Scholarship
H. N. Baetjer Scholarship
Balder Scholarship Fund
James E. Bond Memorial Fund
Dr. Robert W. Buxton Scholarship
Percy M. Chaimson Scholarship Fund
Clahr Scholarship Fund
Israel and Cecilia E. Cohen Scholarship
Dr. William H. Crim Scholarship
Dodge Fund
Marcia Thomas Duncan Medical Scholarship
A. Lee Ellis Scholarship
Arthur Wright Erskine Scholarship
Dr. John E. Esnard Endowment
Sharon Fox Scholarship
Samuel Leon Frank Scholarship
Marion Jackson Givens
Harry Gudelsky Fund
Horace Bruce Hetrick Scholarship

Margaret A. Hicks Scholarship
Charles M. Hitchcock Scholarship
Donald J. Hobart Scholarship
G. D. Jackson Scholarship
Leo Karlinski Scholarship
Elsie Larrimore Scholarship
Laura G. Levine-Mandell Memorial Scholarship
Emmett and Ruth Light Scholarship
Dr. Alex J. and Clara Maysels Scholarship
Dr. James N. McCosh Jr. Memorial Scholarship
Nataro Family Scholarship Fund
Frederick and Anne Nichols and Edwina Justin Fund
Henry Rolando Scholarship Fund
Morton and Elaine Schwartz Scholarship
David Street Memorial Scholarship
Dr. Charles Robert Thomas
Michael Vinciquerra Trust Scholarship
Clarence and Geneva Warfield Scholarship
John L. Whitehurst Fund
Sara A. Whitehurst Fund
Hans R. Wilhelmsen Memorial Scholarship
Walter N. Winters Scholarship
Randolph Winslow Scholarship
W. R. Winslow Residency Trust
Henry Zoller Jr. Scholarship

Loan Funds
Balder Foundation Fund
Class of 1916 Memorial Loan Fund
Class of 1934 Foundation Loan Fund
Class of 1935 Student Loan Fund
Jay W. Eaton Loan Fund
Dr. Wetherbee Fort Loan Fund
Gold-Steinberg Memorial Loan Fund
Isaac Gutman Loan Fund
Sean Peter Houlihan Memorial Fund
James R. Karns, MD Memorial Student Loan Fund
W. K. Kellogg Loan Fund
William and Sarah Kraut Loan Fund
Michael H. Lipman Loan Fund
Joseph Lipskey Loan Fund
Jacob B. and Shirley K. Mandel Loan
Marie K. Manger Loan Fund
Drs. Charles W. and Kathleen R. McGrady Student Loan Fund
Medical Alumni Association Student Loan Fund
Edward and Lina Myerhoff Loan Fund
Nataro Family Student Loan Fund
Jessie Smith Noyes Loan Fund

Charles Pfizer Loan Fund
Dr. Bernard J. Sabatino Loan Fund
Dr. F. Mason Sones Jr. Memorial Student Loan Fund
Webster M. Strayer Loan Fund
Jimmie Swartz Foundation Loan Fund
Jay Whitman Memorial Student Loan Fund

Outside Sources

Central Scholarship Bureau offers interest-free loans in amounts up to $3,500 per year (maximum total of $8,000) to qualified Baltimore City and Baltimore County residents.

c/o #108 Bristol House Apartments
4001 Clarks Lane
Baltimore, Maryland 21215

Health Education Assistance Loans (HEAL) are made by private lenders to medical, dental and pharmacy students. The annual legal loan maximum is $20,000 for medical students; the aggregate maximum is $80,000. The annual interest rate on the loan is variable and may change quarterly. During 1993 the average quarterly interest rate was 6.75 percent. Interest is not subsidized, and will accrue to the loan balance while the borrower is in school, although payment of principal and interest may be deferred while the borrower is a full-time student.

Health Professions Loans may equal tuition plus $2,500 annually. Interest accrual at 5 percent and principal payments are deferred until one year after graduation at which time both interest and principal payments begin. Both interest and principal may also be deferred for internships and residencies and for up to three years of service in the uniformed services (including National Health Service Corps) and the Peace Corps. Interest accrues from beginning of repayment period.

Maryland State Scholarship Administration offers one-year grants of $200-$1,000, which can be sought for subsequent years by proper reapplication. Senatorial and House of Delegates awards are also available. To apply, students should complete the Federal Renewal Free Application for Federal Student Aid or the Free Application for Federal Student Aid.

The Maryland State Scholarship Administration also awards Maryland Family Practice Scholarships. These awards are for students enrolled in the School of Medicine, University of Maryland at Baltimore, and pursuing a Doctor of Medicine degree. A recipient must have been a Maryland resident for five years, have definite financial need and be willing to enter the general practice of medicine serving the state of Maryland in an area of need (bond required). These $7,500 per year awards continue for up to four years and no renewal application is required.

National Medical Fellowships are need-based awards to minority medical students. For further information and applications write:

National Medical Fellowships
250 West 57th Street
New York, New York 10019

Federal Perkins Loans (formerly known as National Defense/Direct Student Loans) are made by the university to students. The aggregate legal loan maximum is $30,000 (including undergraduate borrowing). The annual interest rate is 5 percent. Interest does not accrue until repayment begins.

Federal Stafford Loans (formerly Guaranteed Student Loans) are made by private lenders. The annual legal loan maximum for graduate students is $8,500. The aggregate loan limit is $65,500 including graduate and undergraduate debt. Current interest rate for new borrowers will be variable, but not higher than 8.25 percent. Interest does not accrue until repayment begins.

Federal Unsubsidized Loans are made by private lenders. Students may borrow up to $10,000 a year with an aggregate limit of $73,000. The interest rate is variable and will be adjusted annually, with a 8.25 percent cap. Interest will accrue on the loan from the date of disbursement and may either be paid quarterly, annually, or will be capitalized. During the 1993-94 academic year the rate was 6.22 percent.

Federal regulations governing financial aid are subject to change, and it is suggested that interested applicants contact the Financial Aid Office to ensure having the most recent information.

Academic Information

ACCREDITATION

The University of Maryland at Baltimore is accredited by the Middle States Association of Colleges and Schools. The School of Medicine is accredited by the Liaison Committee on Medical Education, the accrediting body for the Association of American Medical Colleges and the American Medical Association.

GENERAL RULES

The University of Maryland School of Medicine authorities reserve the right to make changes in requirements for admission, curriculum, standards for advancement and graduation, fees and rules and regulations.

Matriculants are required to accept the provisions of the Judicial Board and agree to assume its obligations prior to registration.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the dean. Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the dean's office and to the office of the registrar.

All new students, whether they are admitted to the first-year class or with advanced standing, are expected to attend an orientation for new students.

GRADES AND PROMOTION

The final grades for courses in all four years will be recorded as follows unless otherwise specified by course director:

A	Excellent
B	Very Good
C	Satisfactory
D	Unsatisfactory
F	Fail
Inc	Incomplete—This designation is used only when mitigating circumstances exist; (e.g., illness, unavoidable absence) have prevented the student from completing the course on time. It is to be viewed as a nonprejudicial entry on the student's record; the grade "Inc" remains on the official student transcript.

An award of "Honors" is given to a student who receives a final grade of "A" and performs an additional scholarly effort that is clearly outstanding.

Other grading policies, such as Pass/Fail, may be designated by specific courses and are announced to the class at the beginning of the course.

In addition to the final objective grade and the "Honors" category, the student's overall performance is evaluated subjectively. The new curriculum, with added small group

activities and problem-based learning groups, allows for such assessment in the basic science years. Clinical years' activities are in small groups with close mentoring. This grading will be a significant part of the final assessment. Appropriate evaluation forms are designated for this purpose.

Established rules for advancement and dismissal during all four years have been approved by the faculty and student body representatives of the School of Medicine Council. All regulations related to grading, advancement and dismissal are included in the *Academic Handbook* given to all entering students at orientation.

The faculty reserves the right to determine whether a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

EQUAL OPPORTUNITY

The University of Maryland at Baltimore is actively committed to providing equal educational and employment opportunity in all of its programs. It is the goal of the university to assure that women and minorities are equitably represented among the faculty, staff and administration of the university, so that its work force reflects the diversity of Maryland's population.

All employment policies and activities of the University of Maryland at Baltimore shall be consistent with federal and state laws, regulations and executive orders on nondiscrimination on the basis of race, color, religion, age, ancestry or national origin, sex, sexual orientation, handicap, marital status and veteran status. Sexual harassment, as a form of sex discrimination, is prohibited among the work force of the university.

UNETHICAL CONDUCT

In order to matriculate and/or graduate, students must be of good moral character, consistent with the licensure requirements of the state of Maryland for physicians, and must demonstrate character traits consistent with competent performance as a physician. The school reserves the right to dismiss or fail to graduate any student whose actions or overall academic performance, including clinical performance, do not demonstrate good moral character and ability to function effectively as a physician. Such action may be taken notwithstanding a student's compliance with standards for advancement and graduation set out in the School of Medicine grading policy.

GRADUATION RATES

Ninety-five percent of the students enrolled in the School of Medicine complete their course of study within the four-year period; 2-to-3 percent complete their course of study within the maximum five-year period. These figures are representative of those students actively pursuing their MD degree. They do not include those students in the MD/PhD track (usually six years) or those students who are granted a year off to engage in research, etc.

SALARY AND EMPLOYMENT INFORMATION

A high percentage of graduates enter the practice of medicine after completion of residency training. There appears to be a moderate excess of physicians in some disciplines of medicine and in some geographic areas. However, the overall need for persons holding the MD degree is such that all graduates of the School of Medicine may expect a satisfactory income.

PRIZES AND AWARDS

- American Medical Women's Association Scholarship Achievement Awards
- The Elijah Adams Award for Excellence in Biological Chemistry is presented to the freshman medical student who has achieved an honors grade in the biochemistry and molecular biology course and has written a paper judged of the highest quality by the faculty of the department.
- The Wayne W. Babcock Award for Excellence in Surgery is awarded to a graduating senior for outstanding performance in surgery.
- The Balder Scholarship Award for Outstanding Academic Achievement is presented to the graduating senior with the highest academic record throughout the medical course.
- The Leslie B. Barnett Memorial Medical Student Research Fellowship is a competitive award for the support of a student to perform research.
- The Eugene Sydney Bereston Award for Excellence in Dermatology is awarded to the graduate with outstanding accomplishments and interests in dermatology.
- The J. Edmund Bradley Award for Excellence in Pediatrics recognizes the graduate with both the leading academic record in pediatrics and the characteristics most admired in a pediatrician.
- The Eugene B. Brody Award for Excellence in Psychotherapy honors a graduate with outstanding skill in psychotherapy.
- C. Jellef Carr Award for Excellence in Pharmacology is presented to the sophomore medical student who has achieved an honors grade in the medical pharmacology course and has written a paper judged of the highest quality by the faculty of the department.

- The Louis, Ida and Samuel Cohen Award for Personal Attributes of Scholarship, Ability and Compassion for Patients is presented to a graduate with superior scholarship and scientific knowledge of internal medicine and understanding and compassion for patients.

- Dean's Award for Excellence in Research is presented to the graduating senior who has performed the most notable research during the course of the standard MD program.

- The Donaldson Prize for Excellence in Pathology honors the graduating senior who has demonstrated excellence in didactic and laboratory work in the discipline of pathology.

- The Louis Harriman Douglass Award for Excellence in Obstetrics and Gynecology recognizes the graduating senior with an outstanding academic record and a particular interest in obstetrics and gynecology.

- The Robley Dunglison Award for Excellence in Preventive Medicine honors the graduating student who has demonstrated outstanding competence in the fields of preventive medicine and public health.

- The Society for Academic Emergency Medicine Award for Excellence in Emergency Medicine recognizes the senior who has captured the essence of the ideal emergency physician by demonstrating high skill, equanimity and kindness in an environment which requires quick, clear thinking and action.

- Faculty Gold Medal for Outstanding Qualifications for the Practice of Medicine honors a graduate with outstanding scholarly accomplishments and those qualities of humanity and dedication most desirable in a physician.

- The Jacob Finesinger Award for Excellence in Psychiatry honors the graduate who has demonstrated outstanding skills in general psychiatry.

- The Harlan I. Firminger Award for Excellence in General and Systemic Pathology is presented to the student with the highest performance in the sophomore pathology course.

- The A. Bradley Gaither Memorial Award for Excellence in Genito-Urinary Surgery recognizes the graduate who excelled during the senior clerkship in genito-urinary surgery.

- The Geriatrics and Gerontology Education and Research Program Award for Excellence in the Field of Aging recognizes a professional undergraduate or graduate student who has demonstrated outstanding interest and commitment to the care of older persons.

- The Doctor Sheldon E. Greisman Award is presented to the student whose performance in the first-year physiology course is deemed outstanding.

- The William Alexander Hammond Award for Excellence in Neurology is awarded to the graduating senior with outstanding accomplishments in neurology.

- The Doctor Martin Helrich Prize for Excellence in Anesthesiology recognizes the graduate with the highest academic distinction during the senior clerkship in anesthesiology.

- The Doctor Leonard M. Hummel Memorial Award for Excellence in Internal Medicine honors a graduate with outstanding qualifications in internal medicine.

- The Edward J. Kowalewski Award for Excellence in Education and Training in Family Practice is presented to the fourth-year student who has demonstrated special interest and high academic achievement in family practice.

- The Abraham Lilienfeld Award in Epidemiology and Biostatistics is awarded to the graduating student with an outstanding performance in the courses given by the department in the first two years of medical school.

- The Doctor I. Earl Pass Memorial Award for Exceptional Proficiency in Internal Medicine recognizes a member of the graduating class with an outstanding performance in medicine.

- The Doctor Milton S. Sacks Award in Hematology is awarded to the graduate with the most distinguished record in hematology.

- Student National Medical Association Service Award is presented to the graduating senior who has demonstrated leadership in the Student National Medical Association and made outstanding contributions to the minority community.

- Summa, Magna and Cum Laude Awards of Honor are presented to those candidates for graduation who have exhibited outstanding qualifications for the practice of medicine during their four academic years.

- The Uhlenhuth Award for Excellence in the Anatomical Sciences is awarded in recognition of the graduate with the highest academic record in the anatomical sciences.

- The Rudolf Virchow Award for Research in Pathology is awarded to graduates who have made outstanding contributions to research in the field of pathology.

- The Hans R. Wilhelmsen Prize for Outstanding Achievement in Surgery is awarded to the graduate with the highest academic record in surgery.

- The Charles L. Wisseman Jr. Award for Excellence in Microbiology and Immunology is presented to the student with the highest academic record in microbiology.

- The Theodore E. Woodward Prize in Internal Medicine is the highest award in internal medicine. It is presented to the graduate who has an excellent academic record in the discipline of internal medicine and has displayed the attributes of compassion and dedication in the care of patients.

- The Theodore E. Woodward Award in Physical Diagnosis is awarded at commencement to the graduate whose sophomore performance in physical diagnosis best exemplified the desirable combination of factual information, clinical skills and humanity, and characteristics of an accomplished physician.

Programs of Study

CURRICULUM

Broadly stated, the educational objectives of the School of Medicine are:

- To educate students intensively and broadly in medicine and in the science of medicine. To equip students to engage in a lifetime of learning in order that they may successfully adapt to the changing environment and achieve a high level of professional competence and social awareness.

- To provide opportunities for students at every level of training to pursue areas of special interest for intellectual stimulation and/or career advancement.

- To encourage the development of highly competent primary care physicians, specialists and scholars in basic and clinical research and academic administration.

In order to meet changing needs of graduate medical education and the practice of medicine, the curriculum may vary from year to year. A standing Curriculum Coordinating Committee, composed of department chairpersons, special course chairpersons, faculty members-at-large, and representatives of the student body, has the responsibility of regularly monitoring and reviewing the curriculum and recommending changes whenever they are deemed appropriate.

First and Second Years. The new freshman curriculum beginning in August 1994 will be divided into "blocks" and will be scheduled over a 37-week period including vacations and holidays. The blocks will replace discipline-specific courses. Each block will be planned and taught in an interdisciplinary manner utilizing both basic and clinical scientists. The following are the blocks in order of their occurrence in the freshman year; each has a specific time allotment which will be noted. These are Informatics (1 week); Principles of Human Behavior (1 week); Structure and Development (9.5 weeks); Cell and Molecular Biology (9.5 weeks); Neurosciences (6 weeks); Functional Systems (10 weeks). There will be a longitudinal course entitled "Introduction to Clinical Practice" that will run one afternoon per week throughout the freshman year.

The daily activities of the freshman curriculum also have undergone change. There will be no more than two hours of lecture daily. Twice weekly this will be followed by small group discussions and twice weekly laboratory exercises will follow the lectures. "Laboratory" exercises can take place in the multidisciplinary laboratories, the Anatomy lab, the Computer Learning Center or other sites offering opportunities to demonstrate basic science materials. One day per week after the lectures, one-third of the student body will go to a clinical site or alternate learning area for the Introduction to Clinical Practice course. This course will be offered three times per week to accommodate the entire class. Problem-based learning sessions, utilizing the small group concept, will be held twice weekly for a total of three hours in several of the designated blocks. The remainder of the week is designated for independent study where students may utilize the library, computers, learning center or seek guidance from a faculty mentor.

The integrated curriculum will continue in the second year when sophomore students take two blocks which include; 1) Immunology, Host Defenses, Infectious Disease, Epidemiology and Preventive Medicine (8 weeks); and 2) Pathophysiology and Therapeutics (25 weeks). The more lengthy block is Pathophysiology and Therapeutics and contains: neuroscience and psychiatry, cardiovascular, gastrointestinal, reproductive, pulmonary, renal, endocrine, neoplasia, locomotive and hemopoietic sections. The sophomore year is characterized again by two hours of lecture, small group, independent and problem-based learning sessions and clinical practice.

Third and Fourth Years. The clinical years curriculum was recently revised. The two clinical years are viewed as a single unit with the student assuming progressive responsibility for patient care. The junior clinical experience consists of the following clerkships: Medicine (12 weeks), Surgery (12 weeks), Family Medicine (4 weeks), Obstetrics-Gynecology (6 weeks), Pediatrics (6 weeks), Psychiatry (6 weeks) and Radiology/Ophthalmology or Neurology/Rehabilitation Medicine (4 weeks)—the two four-week rotations alternate between junior and senior years, depending on a student's predetermined schedule. As noted, students take all of these rotations according to individual schedules. The sum of these experiences provides a 46-week introduction to clinical science.

The 36-week block that follows includes a 16-week elective period during which the student may take eight weeks of electives off-campus. An additional eight weeks must be spent in a student internship in one of four clinical fields: medicine, surgery, pediatrics or family practice. Here the student has an opportunity for primary patient care responsibility over a prolonged period of time. These rotations are offered at the University of Maryland Medical System and in approved affiliated hospitals. The third segment is a consecutive eight-week experience in an ambulatory setting. These outpatient settings include internal medicine, pediatrics and family practice, with additional experience in clinical preventive medicine. Attendance in all course work in clinical areas is mandatory. The current clinical curriculum frequently involves weekend attendance. The student may audit available electives in any additional free time.

The 82-week combined clinical years program provides a strong grounding in clinical science with a progressive opportunity for primary patient care responsibility. The curriculum is designed to prepare the medical student for the increasing responsibility demanded by the specialty residency programs adopted throughout the country.

The Curriculum at a Glance

YEAR I—BLOCK SCHEDULE—37 Weeks

I	Informatics	1 week
II	Principles of Human Behavior	1 week
III	Structure and Development	9.5 weeks
IV	Cell and Molecular Biology	9.5 weeks
V	Neurosciences	6 weeks
VI	Functional Systems	10 weeks

YEAR II—BLOCK SCHEDULE—33 Weeks

VII	Immunology, Host Defenses, Infectious Disease, Epidemiology and Preventive Medicine	8 weeks
	(Microbiology, Pathology, Pediatrics,	

	Internal Medicine, Pharmacology, Epidemiology and Preventive Medicine)	
VIII	Pathophysiology and Therapeutics (Pathology, Pharmacology, Internal Medicine, Pediatrics OB/GYN, Physiology, Psychiatry, Epidemiology and Preventive Medicine, Cancer Center, Pediatrics, Neurology, Microbiology)	25 weeks

5 Weeks Study for Boards

*YEAR III—46 weeks * (tentative schedule)*

Medicine Clerkship	12 weeks
Surgery Clerkship	12 weeks
Family Medicine Clerkship	4 weeks
Ob/Gyn Clerkship	6 weeks
Pediatric Clerkship	6 weeks
Psychiatry Clerkship	6 weeks
Radiology/Ophthalmology or Neurology/Rehabilitation Medicine **	4 weeks

* Clerkship timeframes to be adjusted to equal 46 weeks
** 4 weeks may be rotated in senior year

YEAR IV—36 weeks (tentative schedule)

Ambulatory Care	8 weeks
Sub-Internship	8 weeks
Radiology/Ophthalmology or Neurology/Rehabilitation Medicine	4 weeks
Electives	16 weeks

COMBINED MD/PHD PROGRAMS

Research in human disease requires investigators with interests and training in both basic science and clinical medicine. The primary objective of the MD/PhD Program is to train medical scientists. These individuals will differ from most basic scientists by having the clinical background necessary for the management and investigation of human disease. Equally, the MD/PhD medical scientist will differ from most physicians by having extensive laboratory experience and the scientific background that can facilitate the application of basic scientific approaches to clinical problems. To achieve this goal, a flexible program of combined medical and scientific training is provided to highly motivated students of superior research and academic potential. This program fully utilizes the broad range of basic and clinical science opportunities that are available at the University of Maryland at Baltimore.

The MD/PhD Program is offered through the departments of anatomy, biochemistry, biophysics, epidemiology and preventive medicine, microbiology and immunology, pathology, pharmacology and experimental therapeutics, physiology, and the division of human genetics. Doctoral training is also available through the interdepartmental Molecular and Cell Biology and the Membrane Biology Programs at UMAB. In addition, research

training opportunities are provided at the University of Maryland Baltimore County by the departments of biology, chemistry/biochemistry and mechanical engineering.

The degree requirements for the combined MD/PhD are equivalent to those of the separate degree requirements for the Doctor of Medicine in the School of Medicine and the Doctor of Philosophy in the University of Maryland Graduate School, Baltimore. The MD/PhD degree can be completed within six to eight years.

Although the schedule of training can be flexible, entering students typically complete the two preclinical years as regular medical students and receive graduate credit for many courses taken during this period. The students use minimesters and summers to gain research experience in the basic science departments of their choice. Students are expected to "rotate" through the various laboratories in the selected graduate department in order to facilitate the final choice of a thesis advisor.

After the preclinical years, MD/PhD students enroll as full-time graduate students for two-to-four years, taking required graduate courses, seminars and focusing on dissertation research. Subsequently, they begin the clinical clerkships. Elective periods during the clinical years may be used to complete their PhD research. This sequence is general; a student may complete the program in a different sequence, depending on the schedule developed in consultation with the student's advisor.

Applicants to the MD/PhD Program are required to meet the admissions requirements of the School of Medicine and the University of Maryland Graduate School, Baltimore. Qualified candidates are interviewed and selected by the MD/PhD Program Advisory Committee. Applications will be considered from qualified juniors or seniors at any accredited university, as well as from medical students currently enrolled at the University of Maryland at Baltimore. In addition, applications will be considered from students currently enrolled in graduate programs (i.e., MS, PhD) at the University of Maryland School of Medicine or other accredited universities. An application form is included in the medical school admissions packet.

Some applicants from each entering class may be awarded a waiver of tuition (at the financial level of Maryland resident tuition). The waiver will be awarded based upon academic excellence. A stipend may also be provided by the research sponsor during the PhD portion of the program.

For more information contact:

Marshall L. Rennels, PhD
Director, MD/PhD Program
School of Medicine, University of Maryland at Baltimore
655 West Baltimore Street, Room 1-005
Baltimore, Maryland 21201-1559
(410) 706-7478

OFFICE OF STUDENT RESEARCH AND MINORITY AFFAIRS

In an effort to enhance student involvement in biomedical investigation, the school encourages medical students to participate in supervised research projects offered through the office of student research and minority affairs. The medical student program is supported jointly by a training grant from the National Institutes of Health and the office of the dean. The faculty and administration are committed to the training of physician-scientists.

By encouraging medical student research, the Short Term Research Training Program (STRTP) strives to enhance the connection between the treatment of patients and the scientific investigations which enable patient care to advance. The physician-scientist who bridges both basic and clinical sciences and clinical practice is, therefore, in an ideal position to translate research into clinical application, and patient problems into laboratory investigation.

Currently, research is being conducted in several major areas of interest at the school of medicine. These include, but are not limited to, behavior, cancer, cardiovascular disease, endocrinology, environmental health, epidemiology, infections, immunology, neuroscience, respiration, toxicology and virology.

Fellowships are awarded on a competitive basis and currently provide $300 per week for 10-to-12 weeks of full-time participation. These experiences are available to incoming students during the summer before their freshman year, and to medical students generally during the summers after their freshman year. On occasion, awards are made to students during the summer after their sophomore year or to seniors during the academic year. Fellowship applications are due in the office of student research and minority affairs on the second Friday in February.

STRTP funds are not generally available to students with doctoral degrees, nor to those who are involved in doctoral dissertation research or with alternative sources of research funding. However, the program may supplement some alternate sources up to the level of STRTP trainees. Students selected to participate in the program are registered in and attend a summer colloquium consisting of research seminars and lectures on the ethical and responsible conduct of research. These students also present their research to fellow students and faculty during the summer at the Student Research Forum and on Medical Student Research Day in the fall.

The office of student research and minority affairs also provides funded opportunities for students to conduct research in Rotterdam, The Netherlands, through the University of Maryland-Erasmus University Schools of Medicine Exchange Program. In addition, a year-out program is funded by a grant from the American Heart Association for those students who wish to immerse themselves in a research experience for a full year, normally between the sophomore and junior years.

Summer research fellowships are also available to undergraduate minority students, the purpose being to encourage underrepresented minority students to consider the possibility of a career in one of the health professions and/or biomedical research. The program provides students with a realistic understanding of the biomedical research environment through hands-on experience, contact with appropriate role models, and application procedures for professional and graduate schools. Thirty positions are available for minority undergraduate students to conduct research for 10-12 weeks during the summer months at the University of Maryland at Baltimore campus and at selected sites off-campus. Trainees will work under the direct supervision of experienced scientists and will receive $250 per week for the 10-12 weeks period. Summer research applications are due in the office of student research and minority affairs by the last day of February.

Applicants for the STRTP minority undergraduate program must be enrolled in an undergraduate school and in good academic standing at the time of application. Although minority students from any state may apply, preference will be given to Maryland residents. Potential trainees must not have graduated at the time the traineeship begins,

and should have a GPA of 3.0 to be considered. It is strongly recommended that applicants will have successfully completed courses in biology and chemistry.

For further information on research programs contact:

Dr. Jordan E. Warnick
Director of Student Research Programs
14-016, BRB (ext. 6-3026)

GRADUATE PROGRAMS

The University of Maryland Graduate School, Baltimore (UMGSB) was created in 1985 by a state legislative act that merged the graduate education and research facilities of UMAB with the University of Maryland Baltimore County (UMBC). Since then, enrollment has more than doubled and now UMGSB enrolls over 2,800 graduate students, 70 percent of whom are Maryland residents. The linkage broadens the scope of graduate education and research in the region with programmatic emphasis in selected areas of biomedical and physical sciences; engineering; mathematics; information and computer sciences and the social sciences with particular emphasis in public policy studies. A university shuttlebus regularly transports students between the two campuses.

UMGSB capitalizes on its proximity to Annapolis and Washington for the area's wealth of commercial, cultural, industrial and technological resources and actively seeks collaborative efforts and partnerships with government health, science and social service agencies as well as with biotechnology manufacturers and other businesses and industries.

The Graduate School offers the MA, MS, MPS, MFA and PhD degrees, and an advanced certificate in policy sciences. There are also several unique ventures of joint, graduate and professional degree programs such as the MD/PhD, MPS/JD and MS/DDS. A partial listing of related graduate programs includes:

Anatomy	MS, PhD
Applied Physics	MS, PhD
Biological Sciences	MS, PhD
Biological Chemistry	MS, PhD
Biophysics	MS, PhD
Chemistry	MS, PhD
Emergency Health Service	MS
Epidemiology and Preventive Medicine	MS, PhD
Human Genetics	MS, PhD
Medical Technology	MS
Microbiology and Immunology	MS, PhD
Molecular and Cell Biology	PhD
Operations Analysis	MS, PhD
Pathology (Medical)	MS, PhD
Forensic Toxicology	MS
Pharmacology and Experimental Therapeutics	MS, PhD
Physiology	MS, PhD

The level of funding for research has risen dramatically in recent years, particularly in medical and health sciences. Contract and grant awards in FY '93 exceeded $120 million. Major contributors to UMGSB research interests include: National Institutes of Health, National Aeronautics and Space Administration, National Science Foundation, Veteran's Administration, Department of Education, Health and Human Services and agencies of the state of Maryland.

The Graduate School is also committed to creating and adapting new technologies for commercial use. The goal of its office of technology development (OTD) is to promote university inventions and innovations jointly with industry for the public good. OTD evaluates, protects, markets and manages UMAB's and UMBC's intellectual property and serves as a gateway to business and industry to promote economic development.

Graduate School applications and catalogs may be obtained by contacting:

The University of Maryland Graduate School, Baltimore
511 West Lombard Street
Baltimore, Maryland 21201-1691
(410) 706-7131

RESIDENCIES AND FELLOWSHIPS

The office of graduate medical education coordinates and assists in the administration of the University of Maryland's programs of resident education and training. The activities of the office include organizing the accreditation process of residency programs, coordinating the National Resident Matching Program, developing central databases on residents and training programs and serving as institutional liaison for addressing residents' concerns, problems and policies.

Graduate medical education training for residents and fellows is offered in a variety of clinical sites. The majority of clinical training occurs at the University of Maryland Medical System, the Baltimore Veterans Affairs Medical Center and Mercy Hospital. A network of affiliated community hospitals and ambulatory care centers with major commitments to the importance of a teaching environment provides much of the variety and depth offered to residents and fellows.

Programs are accredited by the Accreditation Council for Graduate Medical Education (ACGME) comprised of the following member organizations: American Board of Medical Specialties, American Hospital Association, American Medical Association, Association of American Medical Colleges and the Council of Medical Specialty Societies.

Residency positions are filled through the National Resident Matching Program. Included are preliminary programs in medicine and surgery as well as categorical programs in anesthesiology, emergency medicine, general surgery, orthopaedic surgery, family practice, internal medicine, neurology, obstetrics and gynecology, pathology, pediatrics, psychiatry and diagnostic radiology, radiation oncology, combined programs in medicine/pediatrics and pediatrics/emergency medicine.

Resident and/or fellowship positions are available in the following specialty and subspecialty areas:

Department of Anesthesiology: anesthesiology, critical care, pain management
Department of Dermatology: dermatology

Department of Diagnostic Radiology: thoracic radiology, computed body tomography/ultrasonography/MRI, interventional and vascular radiology, neuroradiology, critical care trauma, musculoskeletal radiology, nuclear medicine

Department of Epidemiology and Preventive Medicine: preventive medicine

Department of Family Medicine: family practice.

Department of Medicine: cardiology, endocrinology, gastroenterology, geriatrics, geographic medicine, hematology, infectious diseases, nephrology, oncology, pulmonary and critical care medicine, rheumatology, combined program in medicine/pediatrics

Department of Neurology: neurology, neurophysiology and epilepsy, electromyography and neuromuscular, stroke, neurologic rehabilitation, neurophysiology, neuroimmunology

Department of Obstetrics and Gynecology: obstetrics and gynecology, reproductive endocrinology, maternal fetal medicine, genetics, family planning

Department of Ophthalmology: ophthalmology

Department of Pathology: anatomic/clinical pathology, anatomic pathology, clinical pathology, neuropathology, immunopathology, forensic pathology, environmental pathobiology research

Department of Pediatrics: pediatrics, adolescent medicine, pediatric allergy, behavioral and developmental pediatrics, endocrinology, infectious diseases, neonatology, combined programs in pediatrics/medicine and pediatrics/emergency medicine

Department of Psychiatry: psychiatry, child and adolescent psychiatry, geriatric psychiatry

Department of Radiation Oncology: radiation therapy

Department of Surgery: general surgery, neurosurgery, orthopaedic surgery, otolaryngology, thoracic, cardiovascular surgery, urology, emergency medicine, pediatric surgery, plastic and reconstructive surgery, combined program in pediatrics/emergency medicine

Correspondence, applications and residency inquiries should be addressed to the chairperson of the respective department or program in care of:

University of Maryland Medical System
22 South Greene Street
Baltimore, Maryland 21201-1595

PROGRAM OF CONTINUING MEDICAL EDUCATION

The School of Medicine, University of Maryland at Baltimore, is concerned with three phases in the education of physicians: undergraduate, graduate and postgraduate or continuing medical education. To fulfill its role in the last of these, the School of Medicine maintains a program of continuing medical education (CME) that offers substantive and accessible training to the state's physicians. The CME Program is administered by the assistant dean for continuing medical education and a full-time staff, with the assistance of a faculty advisory committee.

The programs offered are approved by the American Medical Association for credit in Category 1 (toward its Physician's Recognition Award) and by the Accreditation Council for Continuing Medical Education. To the greatest extent possible, programs are structured around the educational needs of practicing physicians. Both the type and content of the instructional programs, as well as their instructional design, are varied in order to satisfy the learning needs of as many physicians as possible. Courses and other educa-

tional activities sponsored by this program also can be used by physicians to meet the Maryland requirements for relicensure.

For additional information please contact:

Program for Continuing Medical Education
School of Medicine, University of Maryland at Baltimore
655 West Baltimore Street
Baltimore, Maryland 21201-1559
(410) 706-3956

Resources

THE UNIVERSITY OF MARYLAND MEDICAL SYSTEM

The University of Maryland Medical System is a private, nonprofit institution comprised of the University Hospital, the University of Maryland Cancer Center, the R Adams Cowley Shock Trauma Center and the Institute of Psychiatry and Human Behavior. Established in July 1984, the hospital was previously an agency of the state of Maryland. The medical system is the primary clinical setting for the School of Medicine. It is dedicated to providing exemplary health care for the people of Maryland, to preparing students and physicians-in-training for the practice of medicine and the allied health professions, and to carrying out research to improve the quality of health care.

Since its founding in 1823, the hospital has become a major tertiary care referral center that offers the full range of specialized medical and surgical services. In recent years, as the number of health care facilities in urban centers has decreased, the medical system has assumed increasing responsibility for its surrounding community. As a result, more than 100,000 city residents look to the University of Maryland Medical System as their primary source of health care.

The 747-bed hospital is one of the nation's busiest. In one year, it records approximately 23,000 inpatient admissions, 150,000 outpatient visits, nearly 40,000 emergency room visits and 2,000 births. Every day, nearly 5,000 people pass through the hospital's doors. The senior medical staff—more than 600 physicians—is comprised of the clinical faculty of the School of Medicine who supervise training of the more than 400 graduate physician house staff as well as the medical students.

Because of its combined professional and academic environment, many outstanding treatment programs and research facilities have been developed at the medical center. The R Adams Cowley Shock Trauma Center and the University of Maryland Cancer Center are two prime examples.

The R Adams Cowley Shock Trauma Center, linked with the statewide network of emergency communications, transportation and medical care facilities, is second to none. It provides high-speed emergency service to nearly 3,000 critically injured persons each year—the most severe multiple trauma cases in the state—with an impressive 92 percent survival rate. A heliport on the roof of the $44 million R Adams Cowley Shock Trauma Center facilitates rapid transport of the most severely injured and acutely ill patients.

In the Cancer Center, collaboration between research scientists and research clinicians has resulted in notable efforts in treating breast, lung and blood-related cancers. It was at the Cancer Center that researchers pioneered the freezing of a leukemia patient's own platelets for later use during relapses. The center's physicians work closely with other oncology programs within the hospital, tailoring the balance among surgery, radiation and anticancer drugs for each patient's optimal treatment plan. A bone marrow transplant service is also available.

The hospital's intensive care units serve seven medical specialties. Its neonatal intensive care nursery serves critically ill newborns airlifted from points throughout Maryland.

An organ transplant service offers the latest surgical techniques for patients suffering from kidney, heart and pancreatic diseases, and is the only program in Maryland offering pancreas/kidney transplants and lung transplants. The hospital recently installed new

cardiovascular laboratories that support the state's comprehensive cardiology program for children and adults. The Stroke Data Bank, part of the medical system's Stroke Center, is one of only four in the United States. The institution's neurosurgery division has attracted national attention for its innovative techniques used in the treatment of brain tumors. A Gammaknife Center allows patients with inoperable brain tumors a new chance for survival. The high-risk pregnancy, multiple sclerosis and magnetic resonance imaging centers offer the most advanced technology possible.

Coexistent with these technologies is the system's commitment to providing excellent primary care as well as specialized medical care. This is demonstrated by the presence, since 1984, of University Health Center, an ambulatory care facility that incorporates family practice, general adult medicine and several specialty services. It is located one block from the hospital. Ambulatory care also is provided in the hospital by separate emergency units for children and adults.

The University of Maryland Medical System has grown both professionally and physically over the years. Today, through partnerships with the University of Maryland at Baltimore's professional schools, UMMS is the training site for pharmacists, social workers, dentists, nurses and other health professionals and technicians. This interprofessional environment is a unique and valued characteristic of the University of Maryland Medical System.

AFFILIATIONS

Recognizing the importance of providing excellent clinical experiences with stimulating faculty and mentors, the School of Medicine has developed a comprehensive network of affiliations designed to encompass the continuum of medical care including ambulatory, acute hospital, home care, rehabilitation and chronic care. In all programs medical students are trained by and fully supervised by School of Medicine, University of Maryland at Baltimore faculty.

Over the past five years a significant effort to coordinate, expand and improve the ambulatory care experience has resulted in an extensive ambulatory care network of opportunities. Clinical experiences are offered in multidisciplinary teaching clinics, faculty practices, community clinics, private practices and hospital-based ambulatory care programs. Model geriatric clinical education programs, designed at three facilities with large cohorts of elderly patients, serve as stimulating educational experiences where computer-assisted learning augments the faculty preceptor patient experience.

Academic tertiary care experience, demonstrating state of the art technology and ongoing exciting clinical research, is offered at the three major affiliates: the University of Maryland Medical System, the Baltimore VA Medical Center and Mercy Hospital. Additionally, community hospitals with major commitments to the importance of a teaching environment serve as outstanding opportunities for primary and secondary health experiences. These community hospitals attract highly competitive residents who wish to train in a community hospital atmosphere.

A successful network of community, state and federal psychiatric facilities has resulted in a widely acclaimed statewide program for psychiatry training. Special clinical research experience in psychiatry is additionally offered at the Institute of Psychiatry and Human Behavior and at the Perry Point VA Medical Center.

Experience in rehabilitation, home care and chronic medical care is offered through several facilities, each offering special aspects of expertise for those who wish to pursue psychiatry, neuro-rehabilitation and geriatrics.

The following training centers have formal institutional level affiliations with the School of Medicine: Baltimore Veterans Affairs Medical Center, Walter P. Carter Center, Children's National Medical Center (Washington), Deaton Medical Center, Franklin Square Hospital, Greater Baltimore Medical Center, Harbor Hospital Center, Johns Hopkins Hospital, James Lawrence Kernan Hospital, Francis Scott Key Medical Center, Maryland General Hospital, Mercy Medical Center, Montebello Rehabilitation Center, National Orthopaedic Hospital, St. Agnes Hospital, Sinai Hospital of Baltimore, Sheppard and Enoch Pratt Hospital, Springfield Hospital Center, Spring Grove Hospital Center, Union Memorial Hospital, University of Maryland Medical System (includes Shock Trauma and Cancer Center), Western Maryland Area Health Education Center (AHEC) and York Hospital (PA).

BALTIMORE DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER

The new Baltimore VA Medical Center, which opened January 24, 1993, is a 281-bed acute medical and surgical care facility adjacent to the University of Maryland Medical Center. Designed to additionally support a large outpatient program with extensive primary care as well as subspecialty experiences and ambulatory surgery, the new Baltimore Veteran Affairs Medical Center has been designed as a flagship facility. The medical center houses the first Radiology Service in the nation to offer a completely filmless program, made possible by new advances in computer archiving and digital processing of images. Diagnostic quality radiographs are available on over 80 monitors throughout the medical center, providing improved patient care and expanded opportunities for student and house staff education.

A fully computerized patient information system, including bedside terminals, allows for ease of patient care and reduced nonproductive time for students. The system allows instantaneous clinical queries for clinical research and continuous improvement in quality of patient care. Major increases in support staff assigned to house staff teams has resulted in decreased "scut" work activities for students and residents, as support staff is more frequently available for routine phlebotomy, intravenous line adjustments, escort services and clerical support services. A major reconfiguration of nursing and support staff combined with computer designed programs has increased the efficiency of the medical care process so that students, house staff and faculty can better spend their time on direct rather than indirect patient care, and on stimulating educational and clinical research areas rather than on cumbersome support delivery problems.

In the disciplines of medicine, surgery, psychiatry, neurology, anesthesiology, pathology, radiology, rehabilitation medicine, geriatrics and ambulatory care, there is close integration of the faculty, resident and undergraduate levels of the School of Medicine. Special programs in women's health care, endoscopic surgery, low-vision assistance, stroke therapy and a tertiary oncology center are planned for the new facility. More than forty investigators have funded research programs in areas including infectious disease, geriatrics exercise physiology, cardiology, immunology, neurology, oncology and schizophrenia.

AREA HEALTH EDUCATION CENTER PROGRAM (AHEC)

One of the University of Maryland at Baltimore's commitments to improving health care and delivery programs in primary care is the Area Health Education Center (AHEC) program.

The AHEC program has been developed to provide a comprehensive health care education program for undergraduate and graduate medical students, as well as for students

from the other UMAB professional schools. AHECs are multiple health education and training centers that attract students, interns and residents to the several geographic areas, thereby attracting increased numbers of practicing physicians, encouraging development of health care facilities, providing for the training of additional numbers of allied health care professionals and increasing capabilities for the existing program of graduate and continuing medical education and health training.

The University of Maryland at Baltimore AHEC is located in Cumberland, a rural community in Western Maryland. This center affords students the opportunity to understand and experience the valuable and rewarding benefits of delivering primary health care in a rural environment.

It is a matter of school policy that students are required to spend eight weeks of their senior year in clinical education at an ambulatory site. Some students elect to spend this mandatory rotation at the Cumberland AHEC. In addition, senior medical students may choose a rotation at the Cumberland AHEC as an elective in primary care. These experiences are designed to encourage students to consider practice in similar settings and to gain a firm appreciation of the special health needs of rural populations.

OFFICE OF MEDICAL EDUCATION

The office of medical education serves all departments of the medical school as a consultative unit to the following areas:

- Instructional design, implementation and evaluation.
- Media systems design and hardware installation; e.g., operating room TV.
- Faculty development regarding instructional techniques, design, evaluation and technology.
- Educational resources including audiovisual aids, instructional television and computer-assisted instruction.
- Development and implementation of computer-based instructional systems.
- Assistance in development of special educational programs.
- Assistance in curriculum development and evaluation of curricular programs.
- Evaluation of instructional systems and techniques.
- Coordination of library facilities to include the storage and retrieval of all nonprinted educational material and software; operation and maintenance of the Irving J. Taylor Learning Resources Center and the Clinical Media Library, the Computer Learning Center which includes the new Macintosh Computer Learning Center.
- Maintenance, distribution and operation of projection and related audiovisual equipment for use in teaching.
- Tutorial assistance and study skills.

- Research in medical education, instructional design, evaluative techniques and educational technology.

- Production and distribution of videotaped programs for local, regional and national use.

- Consultation with the faculty and staff of the medical school as well as the other UMAB schools in all areas of media production.

- Classroom scheduling.

The office of medical education sponsors academic support services and provides access to several resource facilities. These services are administered by the director of academic development.

Prematriculation Summer Program: This program provides an academic orientation to the medical curriculum to facilitate a smooth transition from undergraduate education to medical school. This six-week program includes learning skills workshops, five weeks of classes simulating the first semester schedule and a final exam week. Classes are taught by seven medical students who participate in an intensive one-week teacher training program and receive elective credit. Faculty mentors advise tutor/teachers regarding course content and resources. Enrollment is voluntary; full participation of enrolled students is mandatory. Up to 20 entering freshman may participate.

Prematriculation Workshop: The purpose is to provide an academic orientation to the medical curriculum for all entering freshman students. This program is a half-day learning skills workshop presented prior to orientation and registration. Attendance is voluntary.

Academic Monitoring: The purpose is to identify and contact first- and second-year medical students who show (a) poor academic performance—to improve their current course performance through appropriate intervention; and (b) successful performance—to identify potential tutors. Contact with students is initiated as soon as possible following each examination.

Academic Counseling: The purpose is to identify problems contributing to poor academic performance, and to recommend appropriate resources for corrective or supportive action to improve academic performance. Direct support regarding learning skills, time-management, exam-taking and referral to other appropriate university services and offices are part of the program. All enrolled medical students are eligible to participate.

Peer Tutoring: The purpose of this service is to provide tutorial assistance for first- and second-year medical students to improve academic performance in basic science courses, overall retention rate and, ultimately, performance on licensure examinations. Medical student tutors provide individual and group tutorials at no cost to students. Tutors are approved by faculty and participate in a tutor-training program.

Board Preparation: The purpose is to provide structured review activities to improve performance on the USMLE Step 1 Exam. Workshops on strategies for preparing for the

USMLE and a half-day practice exam to set priorities for review are offered. Participants are enrolled medical students eligible to sit for the Step 1 Exam.

Irving J. Taylor Learning Resources Center and Clinical Media Library: The Irving J. Taylor basic sciences media library provides students with access to many self-instructional materials including videotapes, slide-tapes, computer-assisted instruction, lecture tapes and reference books. A clinical media library, located in the new Veterans Affairs Hospital library facility, houses materials similar to those of the Irving J. Taylor Learning Resources Center, but with a clinical orientation.

Student Computer Facilities: The office of medical education is responsible for the operation of two student microcomputer facilities: the Computer Learning Center, and the Apple Macintosh laboratory. Both of these facilities are part of the Irving J. Taylor Learning Resources Center and are located adjacent to each other on the second floor of the MSTF building. The *Computer Learning Center* (CLC), located in the Medical School Teaching Facility, is a 20-station MS-DOS microcomputer lab. A new 20-station *Apple MacIntosh Computer Laboratory* is located adjacent to the CLC. Both of these facilities are available for classroom and individual student use. A wide range of medically related software and review questions are available, in addition to word processing and other general purpose software.

The office of medical education also provides illustrative and photographic services.

Illustration: Services include comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation. Additional service includes comprehensive design and finishing of flyers, brochures, programs and posters; and layout and paste-up for offset printing and photographic copying. In addition, they design displays and exhibits. Most of the above is accomplished through computer technology.

Photography: Services include photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment set-ups, surgical, clinical and laboratory activities; and portraiture for school-related purposes. The photography laboratory also handles slide duplication and motion picture photography, and acts as a collection station for commercial processing of color photography. Computer-developed color slides are a major area of service.

HEALTH SCIENCES LIBRARY

The Health Sciences Library is distinguished as the first library established by a medical school in the United States, and is a recognized leader in state-of-the art information technology. The Health Sciences Library is the regional medical library for 10 southeastern states, the District of Columbia, Puerto Rico and the Virgin Islands, as part of the biomedical information network of the National Library of Medicine.

Serving all schools on campus and UMMS, the library contains more than 300,000 volumes, including 2,900 current journal titles, and is ranked in size among the top 25 health sciences libraries in the country.

The library's online catalog allows you to look for materials by title, author, subject, keyword, call number, series, meeting and organization name. In addition to giving infor-

mation on library holdings, the system can determine whether the material has been checked out of the library. The online catalog can be accessed from any computer terminal on the UMAB campus that is linked to the campus network, or from any dial access terminal.

The library supports several computerized search services:

CD-ROM LAN—Available in the Health Sciences Library and through the campus network, the LAN contains the following databases: IPA (International Pharmaceutical Abstracts), Bioethicsline, HAPI (Health and Psychosocial Instruments), PsycLIT (database of psychological literature from the last 17 years), CINAHL (Cumulative Index to Nursing and Allied Health Literature), SWAB (social work abstracts), MicroCat (Maryland Union List of book/journal materials), Computer Select (information, including full-text of articles, concerning computers), VICTOR (University of Maryland at Baltimore online catalog) and Books in Print.

HSL Current Contents—recent citations from sections of the print Current Contents publications (Life Sciences; Clinical Medicine, Physical Sciences, Social and Behavioral Sciences and Engineering).

MaryMed Plus—User-friendly access to the full Medline database. It is available for use in the library, through dial-in or over the campus network. Free passwords are available for students.

Mediated Searching Service—Working with users, database searches are conducted by trained information specialists who have access to over 200 databases.

Micromedex CCIS—The Current Clinical Information Service provides full-text drug and clinical care information. This database is available in the Health Sciences Library and through dial-in or network access across the campus.

An information specialist can help you determine which services best meet your needs. A consultation service is also available to help with research projects. Throughout the year, a series of seminars are offered to acquaint students, faculty and staff with databases, services and information access and management possibilities.

COMPUTER RESOURCES

Computing support for faculty, staff and students is provided for microcomputer, workstation and mainframe computer users by Academic Computing/Health Informatics (ACHI) and by the Computing and Instructional Development Services (CIDS). Both are units of UMAB's Information Services (IS). CIDS is part of the Health Sciences Library's (HSL) Information and Instructional Services.

UMAB students and faculty are able to use IS resources at each step in their research, learning, and teaching; this may include data collection, results analysis and document preparation, including desktop publishing, color printing and preparation of overheads or color slides. Free electronic mail accounts enable the UMAB community to exchange notes, files and documents with others at the university and internationally via either BITNET or Internet. Access to many campus information sources and the Internet is provided through a campus gopher server named UMABNET. Microcomputers are located in several Technology Assisted Learning (TAL) centers and in user areas in both the IS building (100 N. Greene Street) and the HSL (111 South Greene Street). Centrally

located systems in IS and HSL are accessible via the campus ethernet and by dial-up modems from either office or home. TAL Centers are available for use by the campus community and for application program training.

CIDS and ACHI supports training that ranges from microcomputer literacy and microcomputer boot camp to more advanced classes for word processing, graphics, desktop publishing, multimedia and statistical application programs. Training for access to the Internet, network resources, and e-mail packages is also available. For information, call 706-HELP.

MEDICAL ALUMNI ASSOCIATION

The Medical Alumni Association has served all graduates, students, faculty and staff affiliated with the School of Medicine since 1895.

Located in Davidge Hall, 522 West Lombard Street, the Medical Alumni Association office is open weekdays. Among its many activities, the association coordinates the annual reunion weekend, publishes the quarterly *Bulletin* and sponsors an annual social event for each medical school class.

Since the association inaugurated the Annual Giving Drive in 1978, lectures, scholarships and student loans funded by alumni contributions have enriched the programs and goals of the School of Medicine on a daily basis.

Student Life

OFFICE OF STUDENT AFFAIRS

The office of student affairs is designed to provide guidance, advice, help and administrative services to students enrolled in medicine. In addition, the office is responsible for monitoring student registration, progress and advancement, graduation and all aspects of student life related to undergraduate medical education. To this end, the office employs one full-time associate dean, two part-time assistant deans, a coordinator and clerical staff.

While the entire staff is available to offer assistance to all students, some staff members also assume a specialty area within their overall functions. These specialty areas include senior elective advising, student fellowships, national residency programs advising, counseling and administration of the Vertical Advisory System.

Office of Student Research and Minority Affairs. The office of student research and minority affairs serves a dual purpose of providing opportunities for students from high school through medical school to consider the possibility of a career in the health professions and/or academic medicine, and of specifically increasing the number of underrepresented minority students and faculty in those professions. These goals are approached through a combination of enrichment and enhancement programs based in the School of Medicine and in Europe.

The School of Medicine is firmly committed to significantly increasing the number of underrepresented minority students and faculty. In place are strong outreach, recruitment and retention programs to attract and graduate minority students who are African-Americans, Native Americans, mainland Puerto Ricans and Mexican-Americans. The school is actively involved in the Association of American Medical Colleges' Project 3,000 by 2000, which is designed to increase the number of underrepresented minority medical students in all U.S. medical schools to 3,000 by the year 2000. Recruitment and academic enrichment activities are provided for students at the high school, undergraduate and medical school levels.

The office of student research and minority affairs works cooperatively with the offices of admissions, academic development and financial aid and entities in the University of Maryland Medical System to carry out this mission. Activities include information dissemination to all segments of the public, paid summer research preceptorships and volunteer opportunities at the School of Medicine and University of Maryland Medical System. In addition, the office also assists in the school's minority faculty development program and community outreach efforts that will offer exposure to health-related and research-oriented career opportunities.

For additional information about enhancement programs contact:

Dr. Robert L. Harrell Jr.
Office of Student Research and Minority Affairs
School of Medicine, University of Maryland at Baltimore
655 West Baltimore Street
Baltimore, Maryland 21201-1559
(410) 706-7689

Elective Program. The office of student affairs compiles course offerings, schedules courses and changes of electives, and provides for both evaluation of a student's performance during electives and evaluation of the elective courses taken.

Residency Planning. The office maintains a residency advisement program that includes counseling, referral to faculty, alumni and community resources and workshops on residency selection provided during the junior year. Recent graduates are surveyed annually so that feedback from a number of residency programs of interest to our graduates is kept as current as possible.

Vertical Advisory System. At the beginning of the freshman year students are assigned two faculty advisors. Generally, one of the advisors is in the basic sciences and at least one is a physician. Each pair of advisors is usually assigned three or four incoming students per year with the intention that the relationship will continue through the four years of medical school. The advisory system provides a helpful, ongoing interchange concerning academic, social, personal and career problems and opportunities.

Human Dimensions in Medical Education (HDME). The HDME Program provides opportunities for informal activities among students and faculty outside the classroom setting. These range from social gatherings to small group discussions of concerns and feelings related to the personal and professional aspects of medical education and practice.

Students may elect to participate in the HDME Program at any point in their medical school career. Many enter the program by attending the prefreshman orientation retreat held in late August. The retreat is attended by students from all levels of training, faculty members and, in many cases, spouses or close friends. Thus, participants are provided an opportunity to get acquainted in an informal and intimate off-campus setting. Much of the time at the retreat is spent in intensive small group sessions. Topics of discussion are determined in each group, but typically include adjustment to medical school, the impact of a medical career on domestic life and the problem of setting priorities among various professional and personal demands. Recreational activities also are included in the four-day experience.

Students in the HDME Program also participate in the Vertical Advisory System (see office of student affairs), but normally are assigned faculty advisors within the HDME program.

HDME was conceived at The Center for the Study of the Person in LaJolla, California. The program is planned and operated locally by student-faculty committees. One goal of the program is to provide an environment in which students and faculty advisors can develop a bond during the four years of medical school. Another desired outcome is the development of effective communication and listening skills that will enable medical students, house officers and faculty members to become better health care providers.

Family and Friends' Day. Usually in mid-fall, freshman students are asked to notify the office of student affairs of two or three people they would like to have invited to Family and Friends' Day—generally, parents or partners. Following a continental breakfast, those attending hear presentations from the dean, the associate deans for student affairs and medical education, and senior faculty members representing some of the major medical specialties. Upperclass students give their versions of life in the preclinical and clinical years, and a student-spouse discusses medical school from the viewpoint of a "significant other." There is time for informal discussion with the presenters and other members of the faculty, and the morning ends with a tour of Davidge Hall. Family members often travel substantial distances for this event, and it provides an opportune time to show them around campus and the Baltimore area during the afternoon.

STUDENT GOVERNMENT

The Student Council is the organization recognized by the medical school administration as the official representative body of the registered students at the School of Medicine. Council duties include disbursement of student activities funds according to the needs of its members and coordinating student input in institutional administrative policy decisions. Student Council officers serve as student representatives to national meetings of organizations that guide national educational and medical policies. The council also conducts elections of all class officers.

STUDENT ORGANIZATIONS

Alpha Omega Alpha (AOA). Alpha Omega Alpha, the national medical honor society, has a chapter at Maryland comprised of students who are elected to membership at the end of their junior year or beginning of their senior year. Election to AOA is based on scholastic achievement, service to the school, qualities of leadership, integrity and fairness to colleagues. Members coordinate programs and lectures with the goal of furthering academic interest and curiosity. Programs of recent years have included a lunchtime lecture series on topics in the history of medicine, the Woodward lecture series, an EKG interpretation course and sponsorship of a clinical visiting professorship. AOA also sponsors Medical Student Research Day and Junior/Senior Night, an orientation for juniors to the matching process.

American Medical Student Association. The University of Maryland Chapter of the American Medical Student Association (AMSA Maryland) offers energetic and committed students the opportunity to become actively involved with a group of dynamic and concerned medical students on both the local and national levels.

AMSA is the largest independent medical student group in the country with 30,000 members and thus uniquely promotes the interests of medical students and the public health. Health care reform is our focus and AMSA Maryland's focus. Recently, AMSA was invited to participate in the Clinton Health Care Reform Task Force and testified before the House Ways and Means Committee on student loan reform. National AMSA projects include the Generalist Physicians in Training (GPIT) Program, the Washington Health Policy Fellowship Program, the Health Promotion/Disease Prevention (HPDP) Program, annual international health tours, occupational health site visits and internships with our legislative affairs director. Numerous AMSA Task Forces provide opportunities for every student, with topics ranging from computers to aging to medical student well-being.

AMSA is completely student-run, so leadership opportunities abound here in the chapter and at the national level. Other than projects, social activities, leadership and networking opportunities, AMSA benefits include a four-year subscription to the NEW PHYSICIAN, a monthly medical student magazine, discounts on medical texts and travel, opportunities to enroll in AMSA's health and life insurance plans, AMSA student loans (Stafford and HEAL) and access to excellent national resources (booklets, videos, people, etc.).

American Medical Women's Association (AMWA) Student Branch. The AMWA Student Branch at the University of Maryland is a dynamic group responsive to the needs of the female medical student. While its first commitment remains to provide support and promote friendship among students, faculty and physicians, AMWA also provides a network

where students can meet and discuss issues such as lifestyles in medicine, career choices, health and political issues important to women and the student body at-large. Local activities include potluck dinners where special guest speakers address issues, monthly noon-time business meetings and get-acquainted gatherings with students and faculty.

Asian Professional Students Association. The Asian Professional Students Association (APSA) was formed by a group of medical students in 1984, and since then the association has grown to include members of other schools at UMAB. The APSA is open to all students, teaching staff and employees, regardless of race, cultural background, sex or country of origin. The goals of the association are to encourage dialogue among fellow students of different cultural backgrounds and to provide a platform for those who appreciate Asian culture. APSA also sponsors education and social activities for its members and friends.

The Better Half. "The Better Half" is a support group open to all interested medical students and their significant others (i.e., husbands, wives, boyfriends, girlfriends). The Better Half's goal is both social and supportive. Maintaining a relationship while in medical school can be difficult and knowing other people in the same situation can be helpful to both students and their partners. Gatherings such as potluck dinners, wine tasting, pizza parties, wine and cheese parties and couples ice skating have been popular activities.

Big Sib Program. Each year interested upperclassmen (usually sophomores) "adopt" at least one entering freshman as a little sib. Newly admitted students receive correspondence from their fellow big brothers/sisters during the summer prior to their entry. Supported by the office of admissions, the program is sponsored by students and is intended to provide a platform for entering students to address their questions and concerns to fellow students who have experienced "life as a medical student."

Christian Medical Society. The Christian Medical Society (CMS) is a local chapter of a national organization that exists to provide support and encouragement to Christian medical students and physicians and to promote Christian practices and ideals within the medical community. The group meets in the evening once a week for fellowship, prayer and discussion. A meal is shared every third week. Discussion topics for the meetings include bible study, short-term missions, ethics, Christian family life within the medical profession and evangelism. In addition, the CMS provides volunteers to help staff the Baltimore Rescue Mission, which gives medical aid to the homeless.

Family Practice Interest Group. The Family Practice Interest Group is sponsored by the Maryland Academy of Family Physicians and the Department of Family Medicine. Membership fees are paid by the Maryland Academy and members receive monthly professional journals free of charge. Monthly meetings are held during which students have the opportunity to meet practicing family physicians. These meetings are usually informal talks focusing on subjects relevant to family practice not covered in the academic curriculum. The group also encourages student leadership at state and national levels.

Gertrude Stein Medical Society. The Gertrude Stein Medical Society is a group of medical students whose goal is to foster support among gay and lesbian students and to encourage interaction and education among all students at the university. The group seeks to help

other students and faculty understand the special needs of the gay and lesbian community through education and community service. The group meets bimonthly with potluck dinners and other social events.

Human Dimensions in Medical Education (HDME). The Human Dimensions in Medical Education (HDME) Program sponsors a four-day, preorientation retreat in Western Maryland each August for incoming freshmen that is run jointly by upperclass students and faculty members. The retreat enables incoming students to get to know each other and their advisors in an informal setting —prior to the "downtown" student orientation. Each student is assigned to a small group of entering freshmen and upperclass students led by one or both of the faculty members who will serve as the student's advisors for the duration of medical school. Emphasis is placed on meeting others as people, apart from traditional "professor/medical student" roles. Spouses and "significant others" of students and faculty are welcome. They, too, are assigned to small groups. In addition to small group meetings, retreat participants spend time together at meals, parties and at evening events. Unscheduled afternoons may be spent enjoying waterskiing, horseback riding, hiking, golfing, swimming and playing in the nearby waterfall.

Jewish Medical Student Organization. The Jewish Medical Student Association encourages all medical students, regardless of specific affiliation (i.e., orthodox, conservative, reform or non-Jewish) to join and participate in the group's activities. The association works closely with the Jewish Community Center's Office for Graduate Studies, which provides sponsorship for many of its activities, including Friday night dinners, talks on Jewish medical ethics and the building of a sukkah. The association also works with other schools on campus and in the Baltimore area to plan joint activities.

Maryland State Medical Student Association. The Maryland State Medical Student Association (MSMSA) is a component of the Medical and Chirurgical Society (Med-Chi) of the state of Maryland, which is a state component of the American Medical Association. MSMSA is involved in issues of health care, medical education and peer review, especially in the state of Maryland. MSMSA and AMA memberships are usually solicited together, and membership benefits include subscriptions to the *Maryland Medical Journal* and AMA *News*. MSMSA provides active student representation in Med-Chi and the AMA.

Organization of Student Representatives. The Association of American Medical Colleges (AAMC) was founded over 100 years ago to improve the quality of American medical education. It now includes membership of 126 medical schools, 85 academic societies such as the American College of Physicians and 435 teaching hospitals. It maintains numerous data sources available to its members and works cooperatively with other medical organizations such as the American Medical Association. It provides information and testimony to the U.S. Congress and other federal agencies concerning medical and health-related issues. The Organization of Student Representatives (OSR), the AAMC's student voice, is composed of one student representative from each participating medical school. OSR members gather at an annual meeting each autumn to discuss matters of concern to the nation's medical students and to elect an Administrative Board. The 12-member Administrative Board meets quarterly with the boards of other AAMC Councils to formulate AAMC programs and poli-

cies reflecting student views. OSR business is also conducted at regional spring meetings. The OSR delegate channels AAMC information to the student body on medical education issues such as curriculum changes, the residency match and student indebtedness.

Student National Medical Association. The University of Maryland Chapter of the Student National Medical Association (SNMA) is a medical student organization that seeks primarily to provide academic and social support for underrepresented minority medical students at the University of Maryland at Baltimore. The SNMA organizes study groups, provides valuable course information and review materials, and facilitates organized discussions between upperclassmen and entering students on course requirements and strategies.

The SNMA also seeks to involve itself in health and educational activities that benefit the surrounding community and its youth. In past years, the SNMA has been involved in tutoring local high school students, health screening programs in the community and in presentations informing high school and college students of medical school opportunities. In addition, the SNMA has sponsored activities for black history month that have included seminars and films. SNMA is active in programs that promote greater interaction among underrepresented students, physicians, faculty and alumni.

PUBLICATIONS

Academic Handbook. The *Academic Handbook* is the "official word" on medical school policy and life, written by those who run the various programs described—administrators, faculty, students. Although the book is prepared through the office of student affairs, student participation and feedback contribute significantly to its effectiveness.

AMSA *Directory.* With financial support from the office of student affairs and the office of admissions, the American Medical Student Association (AMSA) at UMAB compiles a student address and telephone directory each fall. The book is available to all medical students at no cost.

Snowdays. *Snowdays* is a booklet written by the freshman class for entering freshmen. Designed to acquaint students with the University of Maryland at Baltimore and surrounding areas and metropolitan Baltimore, it includes information on housing, eateries and entertainment that would be helpful to people new to the city. *Snowdays* was conceived in the hope of providing freshmen with information that might prove useful prior to their starting the school year.

The Yearbook *(Terra Mariae Medicus).* Since 1896 *Terra Mariae Medicus* has provided wide coverage of student life. It is a collection of moments and memories from the four years of medical school put together by the members of each senior class. Each senior receives a yearbook, the cost of which is included in the student activities fee.

Zebra Guide. Moving from the basic science classrooms to the third- and fourth-year clinical clerkships is a major transition. The *Zebra Guide* is an introduction to the clinical years of medical school. It was written by students for students. The guide contains helpful hints

in areas such as getting organized, medical records, roundsmanship and formal communications. It also contains step-by-step instructions for various procedures performed during clinical clerkships. The *Zebra Guide* is meant to enhance interaction among students, residents and attending physicians during clinical clerkships.

INSTITUTIONAL GOVERNANCE AND PLANNING

The Committee System. Several committees are actively involved in shaping the School of Medicine, particularly the curriculum and other essential aspects of medical education, and students have a voice on these committees. The following committees/councils include students in their memberships.

Curriculum Coordinating Committee (CCC) and Subcommittees. The task of the Curriculum Coordinating Committee is to continually study and evaluate the curriculum and methods of instruction, to make recommendations concerning changes and innovations in the curriculum and instructional procedures, to make a continuing study of the student achievement evaluation process and to recommend changes when necessary. In addition, the CCC Subcommittees; i.e., Year I, Year II and the Clinical Years Committees, each include two student representatives elected by their classmates.

School of Medicine Council. Through the School of Medicine Council, representatives of the faculty, students, house staff, alumni and affiliated institutions and School of Medicine administration participate in the development of school policies. In addition, council members hear status reports from committees appointed by the dean. These include the reports of the Curriculum Committee, the Annual Admissions Report and those of the various search committees. The Council meets monthly during the academic year, offering students an excellent opportunity to develop an understanding of the issues affecting the operation and goals of the medical school. There are approximately 80 voting Council members, 11 of whom are students.

Judicial Board. Acceptable behavior within the academic community, including proper behavior on examinations, falls within the purview of the judicial review system and its functioning body, the Judicial Board. The system and operation of the board are defined in the "Statement of Ethical Principles, Judicial Review System and By-Laws of the Judicial Board," which is printed in its entirety in the *Academic Handbook* and distributed to incoming freshmen at orientation.

The board consists of a chairperson appointed by the dean and representatives of the faculty and students in the medical school community. Any member of the community who directly witnesses an act that he or she deems unethical should report the incident in a signed letter to the chairman of the Judicial Board. The board will then investigate the issue and hold hearings, as defined in the aforementioned document. Findings of the board and its recommendations with respect to the accused are forwarded to the dean. Three student representatives, one each from the sophomore, junior and senior classes, are appointed by their class presidents.

Ethical Advisory Committee (University Hospital). This state-mandated committee is composed of about 25 physicians, nurses, social workers, administrators, clergy, attorneys

and other personnel, and welcomes the input of students and residents as nonvoting participants. The committee advises hospital staff and families on requests regarding difficult ethical decisions such as life support for terminal patients, and also helps develop hospital policy regarding such critical situations. The committee also serves an educational function to hospital staff and reviews legal and legislative decisions.

Special Task Forces. On occasion, special committees and task forces are established to examine school policies or curriculum issues. Where these issues have direct relevance to students, the classes are frequently invited to send representatives to these functions. Major changes in policy or curriculum typically take two or more years to plan and implement, and this can be frustrating to students who will be members of each class for only one year. At the same time, however, each group of entering students reaps the benefits of changes to which their predecessors have contributed and they now have the opportunity to leave a similar legacy to their successors.

STUDENT AND EMPLOYEE HEALTH SERVICES

Student and Employee Health provides comprehensive care to UMAB students. It is located in suite 160 of the University of Maryland Professional Building, 419 West Redwood Street. The office, staffed by family physicians and nurse practitioners, is open for regular appointments from 8 a.m. to 4:30 p.m., Monday through Friday. Students can also be seen until 7 p.m., Monday through Thursday, and Saturday, 8:30 a.m. to noon (for emergencies only), at University Family Practice, 29 South Paca Street.

Patients are seen by appointment only (call 328-6009), although true emergencies can be seen on a walk-in basis. A doctor can be reached after hours and on weekends by calling 328-6790 or 328-5140. If you need to be seen after hours, arrangements can be made with the doctor on call. Do not go directly to the emergency room unless the situation is life-threatening. A call to the family physician can save dollars in E.R. fees.

Gynecological services, including health maintenance (PAP smears, etc.), family planning and routine problems, are provided by the family physicians or nurse practitioners. Birth control pills are available at a reduced cost for students receiving their GYN care through Student and Employee Health.

All full-time students are required to have health insurance. An excellent insurance policy is available through UMAB that provides wide coverage for many problems, including obstetrical care. The cost of most of the care provided at Student and Employee Health is paid for through your student health fee. At registration, all full-time students must either purchase the UMAB policy or waive it by showing proof of comparable coverage. The deadline for waiving the UMAB policy is in late September. If proof of comparable insurance is not received at Student and Employee Health by that time, the UMAB policy must be purchased for each month the waiver is not presented. Demonstrated proof of comparable insurance is required each year the UMAB policy is not purchased.

Hepatitis B is an occupational illness for health care providers. It has serious consequences and can even be fatal. Immunization against Hepatitis B is required for medical, dental, dental hygiene, nursing, medical technology and PharmD students. The series of three immunizations is given through Student and Employee Health.

All new students are required to complete a Report of Medical History and an Immunization Record form that documents immunity to childhood illnesses. Students fail-

ing to present these completed forms as freshmen will not be permitted to register for the sophomore year. All family members can be seen at Family Medicine Specialists, the faculty practice of the Department of Family Medicine. The family physicians provide care for the entire family, including obstetrical and pediatric care.

COUNSELING CENTER

The Counseling Center provides professional individual and group counseling to UMAB students. Some of the problems that students seek help with include: stress, relationships, drugs or alcohol, eating disorders, loss of a loved one and stressful changes in school or home life.

Students are always seen by a professional—social worker, psychologist, psychiatrist or addiction counselor. Costs associated with seeing a therapist usually are covered by health insurance; however, no one is ever denied services based on ability to pay. Students are seen by appointment and students' class schedules can be accommodated in scheduling appointments. All Counseling Center services are completely confidential.

HOUSING

UMAB's two residential complexes offer different living arrangements with maintenance and utilities included; programs and activities; supportive and accessible staff and a convenient location. All residencies are carpeted and fully furnished. In recent years many entering students have taken advantage of the opportunity to live on campus. Students living on campus are guaranteed the option of remaining in housing throughout their professional school years. Currently, approximately 250 students live in the campus units which are designed to meet the needs of a diverse student population.

The housing staff operate the UMAB residences according to the philosophy of helping students to create an atmosphere conducive to all types of learning and personal growth. The residences diverse communities encourage resident in building relationship and their own identity.

The Pascault Row Apartments, historic buildings renovated for student living, consist of efficiency and one and two-bedroom units. They are equipped to accommodate one to four students, depending on the unit type. Each apartment contains a compact kitchenette, bathroom and living area. Washers/dryers are centrally located in the buildings.

For housing application forms and information contact:

Director of Residence Life
University of Maryland at Baltimore
Room 108, 621 West Lombard Street
Baltimore, Maryland 21201-1575
(410) 706-7766

ATHLETIC CENTER

The campus Athletic Center, on the tenth floor of the Pratt Street Garage, is equipped with a squash court; two handball/racquetball courts; two basketball courts which are also used for volleyball; and a weight room with two 15-station universal gyms, stationary bikes and rowing machines. Men's and women's locker rooms each have showers and a sauna.

Men's basketball, co-ed intramural basketball and volleyball teams compete throughout the fall and spring semesters. Squash and racquetball tournaments also are held in the facility.

BALTIMORE STUDENT UNION

The Baltimore Student Union is a cultural and social center for students, faculty, staff, alumni and guests. Activities and services of the union include meetings, receptions, movies, dances and other forms of indoor activity. The multi-purpose Baltimore Student Union houses the campus offices of student affairs and student life, records and registration, student financial aid, housing, and support services for international students and disabled students, student government association, credit union, ATM machine, Courtyard Cafe, bookstore, lounge space, meeting rooms, study lounge and vending machines in addition to dormitory-style accommodations for UMAB students.

PARKING AND TRANSPORTATION

On-campus parking is available to students. Commuters will first have to get a parking permit ($1), which allows campus parking but does not guarantee a space. Commuters may park in the Lexington Garage and Koesters Lot (Lexington and Pine Streets) at the current study rate of $3.00 per day on a first-come, first-served basis.

Students who live in on-campus housing pay for parking by the semester or year and are guaranteed 24-hour parking in a garage adjacent to their residence facility. For more information about parking on campus, write Parking and Commuter Services, University of Maryland at Baltimore, 622 W. Fayette St., Baltimore, Maryland 21201-1547 or call 410 706-6603.

Public transportation makes the campus accessible by bus, subway and light rail. More than a dozen MTA bus routes stop in the campus area. The Baltimore Metro (subway) runs from Charles Center downtown to Owings Mills in northwestern Baltimore County. A light rail line offers service with park and ride accommodations from Timonium in northern Baltimore to Glen Burnie in Anne Arundel County. The UniversityCenter stop is at Baltimore and Howard Streets.

LIVING IN BALTIMORE

Baltimore is a fun, friendly city with many affordable and convenient housing options. The brochure Living in Baltimore describes on- and off-campus options for UMAB students; it is available through most UMAB admissions offices or buy calling the residence life office at 410 706-7766.

On-campus living options include furnished university-owned apartments and dormitory-style accommodations plus unfurnished apartments in a half-dozen privately owned loft district buildings on campus. The Baltimore Student Union and Pascault Row apartments are the two university-owned, on-campus housing complexes.

Many students choose to live in neighborhoods surrounding the UMAB campus. A wide range of rooms, apartments and home rentals are available throughout the metropolitan area. The student life office, located in the Baltimore Student Union, keeps a listing of available rooms and apartments.

Courses of Study

YEAR I—37 WEEKS

Block I—Informatics—(1 week)
Students begin their medical school training with a one-week introduction to medical informatics. The curriculum includes instruction in the access of campus-wide electronic resources and those available via the Internet. Students gain essential computer literacy skills in needed areas and are introduced to the use of electronic mail. Learning experiences are designed to bring computer relevancy to medical research and clinical applications. Applications software pertinent to Year I studies are introduced to the students.

In collaboration with the Human Behavior Block (Block II), students also are introduced to Problem-Based Learning (PBL) and the Bio-Psycho-Social Model. Participation in two PBL sessions requires the application of informatics skills to clinical cases. The formats for this block include didactic lectures, panel discussions, computer laboratory experiences, and PBL small groups. (Deborah Finkelsen, Steven Barkley)

Block II—Human Behavior—(1 week)
This interdisciplinary block is based on the critical truth that behavior—including that of patients, physicians and the community—plays a central role in the prevention, incidence, prevalence, diagnosis, treatment and prognosis of illness. Psychiatry and Pediatrics faculty emphasize a biopsychosocial understanding of the patient-physician dyad in order to promote students' understanding of how culture, family and individual psychology integrate with biology to influence health, illness (including bereavement) and treatment across the life span. Within this context, the block will help students (1) to acquire an understanding of significant behavioral science concepts relevant to the understanding of human behavior, (2) learn about changes in human behavior over the life cycle and (3) understand the influences on the physician-patient interaction in different clinical situations.

The course is presented in the form of lectures, demonstrations and small group sessions. In addition, a case exercise presented in a problem-based format will provide students with the opportunity to apply the concepts acquired through didactic presentations and independent research. (Dr. Bruno Anthony)

Block III—Structure and Development—(9 weeks-2 days)
Fundamentals of Structure and Development. A comprehensive overview of the morphological and developmental organization of the human body is provided. The basic concepts of structure as related to function are described in lectures and demonstrations. Study includes all levels from gross morphology to the ultrastructure of cells revealed by electron microscopy. Laboratory facilities for gross examination are provided for dissection, topographical study, osteology and radiology. Light microscopical laboratories are available for study of histological preparations of human tissue and for correlation of tissues studied at this level with electron micrographs. The course also includes instruction in living anatomy, radiology and clinical correlation. Laboratory instructors include anatomists, surgeons and radiologists. The interdependence between structure and function in the different tissues and organs of the body is emphasized. (Dr. Charles Barrett)

Block IV—Cell and Molecular Biology—(9 weeks-2 days)

It has become clear that many disease processes can be understood at the cellular and molecular level. Thus, an understanding of biological molecules and their interactions underlies modern medicine and the treatment of diseases. The goal of this course is to present fundamentals of biochemistry, cell biology, molecular biology and human genetics from an integrated multidisciplinary perspective. Further, these molecular principles are correlated with clinical issues throughout the course so that the importance of cell biology in the illumination of the causes of, as well as the strategies for the treatment of, many diseases is clearly revealed.

This comprehensive course presents a concise view of many topics including the basic structure and function of mammalian cells, structure and function of proteins and enzymes, cellular energetics and metabolism, biochemical nutrition, cellular receptors and intracellular signalling. Fundamental principles of modern molecular biology are presented, including DNA structure and function, protein synthesis and the regulation of gene expression. The principles of modern molecular biology are integrated with clinical human genetics so that fundamentals of cytogenetics and population genetics are examined.

The goals of this course are accomplished through a series of focused lectures complemented by clinical correlation sessions presented by the clinical faculty. In addition, this course includes a major commitment to teaching fundamentals through multiple small group sessions where students learn through problem solving, clinical case studies and through discussion and presentation of the medical literature. In addition, computer programs are available that provide independent, self-directed opportunities for learning the material covered throughout this course. (Dr. Terry Rogers)

Block V—Neurosciences—(6 weeks)

The Neurosciences Block provides a unified approach to the study of the central nervous system; i.e., fundamental concepts of neuroanatomy, neurochemistry, neurophysiology, clinical neurology and psychodynamics are considered in an integrated sequence. The course begins with structural, biochemical and developmental aspects of the brain and spinal cord. Studies of the major sensory and motor systems and consideration of higher neural functions subsequently form the core of the course. Clinical presentations highlight the importance of major neurobiological principles in the hospital and office setting. Methods used include lecture, laboratory and small group discussions, along with self-teaching and self-evaluation units. The course faculty includes members of the departments of anatomy, biochemistry, physiology and neurology. (Dr. Marshall Rennels)

Block VI—Functional Systems—(10 weeks)

This block covers the functional aspects of major organ systems. It provides students with a basic understanding of mammalian and, in particular, human physiology, and lays the foundation for the study of clinical medicine. The subject matter is organized into sections that cover cellular, cardiovascular, renal, respiratory, gastrointestinal, endocrine and integrative physiology. Each block ties together aspects of structure with function and includes discussion of relevant clinical and pathophysiological applications. Conference periods are used for clinical correlations, small group discussions, laboratory exercise and computer-assisted simulations. The curriculum includes problem-solving and problem-based, self-learning sessions. (Dr. Michael Selmanoff)

ICP—Introduction to Clinical Practice

The Introduction to Clinical Practice course will run through all four years of medical school. During the first two years, the course will occupy one afternoon each week and will introduce interactive discussions on topics such as ethics, intimate human behavior, nutrition, interviewing and physical diagnosis issues, topics relevant to the delivery of primary care. First-year students will learn interviewing and basic physical diagnosis during the scheduled afternoon block at an off-site primary care setting. Sophomore students will have this time assigned to the Introduction to Medicine course, a small group, hands-on experience with more sophisticated physical and diagnostic examinations involving internal medicine, pediatrics, neurology and psychiatry. Junior and senior students will spend one-half day each week on a longitudinal continuity experience in the same primary care site over the two-year span, allowing both mentoring by the physician and continuity-of-care patient experience.

YEAR II—38 WEEKS

Block VII—Immunology, Host Defenses, Infectious Disease, Epidemiology and Preventive Medicine—(8 weeks)

The Immunology, Host Defenses, Infectious Diseases, and Epidemiology and Preventive Medicine block is the first block in the second year and is eight weeks in duration. The block is divided into four sections: (a) Host Defense Mechanisms; (b) Bacteria and Bacterial Infections; (c) Epidemiology and Pathogenesis of Viral Diseases and (d) Parasitic and Mycotic Infections. The primary intent of this block is to convey to students the general principles of Immunology and to introduce infectious diseases caused by bacteria, viruses, fungi and parasites. The format for this block will include lectures, small group discussions (coordinated by the Microbiology and Immunology basic science faculty), clinician small group conferences (coordinated through the department of medicine), problem-based learning (PBL) sessions, and laboratory and computer-based sessions which will combine "hands on" experience with infectious microorganisms as well as demonstrations and self-instructional material. Faculty from the department of microbiology and immunology will also participate in the Pathophysiology and Therapeutics block (Block VIII) when appropriate. (Dr. David Silverman)

Block VIII—Pathophysiology and Therapeutics—(25 weeks)

The course of Pathophysiology and Therapeutics provides an interdisciplinary examination of the basic principles of pathology and pharmacology applied to both normal and disease processes. This 25-week course incorporates basic concepts of biochemistry, physiology, microbiology and immunology, epidemiology (as applied to clinical research, health care organization, occupational and environmental medicine) and clinical psychiatry (including psychopathology and psychiatric treatment modalities). The course begins with the general principles of pathology and of pharmacology, and is followed by the study of disease processes and their treatment from both a mechanistic and morphological viewpoint. Emphasis is also placed on the mechanism, action and interaction of pharmacologic agents in normal and disease states. The course is divided into nine sections: (1) General Principles of Pathophysiology and Therapeutics; (2) Neoplasia and Oncopharmacology, Environmental Pathology and Toxicology, Occupational and Forensic Medicine; (3)

Neuroscience; (4) Cardiovascular/Renal/Hemodynamics; (5) Hematopathology; (6) Gastrointestinal; (7) Pulmonary; (8) Endocrinology, Reproduction and Development; (9) Skin and Bone Pathology and Pharmacology. The course is complemented by a year-long parallel program of case studies utilizing a problem-based approach. The learning format includes lectures, small group discussions, clinical-pathological correlations, problem-based learning, case-based learning, and laboratory and computer-based sessions. Faculty from most of the departments of the School of Medicine have teaching involvement in this block. (Drs. Jordan Warnick and Raymond Jones)

Study for Board Exams—(5 weeks)

YEAR III—46 WEEKS (TENTATIVE SCHEDULE)

Medicine..... 12 weeks
Obstetrics & Gynecology ..... 6 weeks
Surgery ..... 12 weeks
Radiology/Ophthalmology
Pediatrics ..... 6 weeks or
Neuro/Rehab Medicine..... 4 weeks
Psychiatry..... 6 weeks

YEAR IV—36 WEEKS (TENTATIVE SCHEDULE)

Ambulatory Care..... 8 weeks
Radiology/Ophthalmology
Sub-Internship..... 8 weeks or
Neuro/Rehab Medicine..... 4 weeks
Electives ..... 16 weeks

Course Offerings

Anatomy

Department of Anatomy
Professor and Chair
Michael T. Shipley, PhD

The educational goal of the department of anatomy is to provide a basis for understanding the development, structure and function of the human body. To this end, the department of anatomy faculty provides instruction as a major participant in two integrated teaching blocks, Blocks III and V, and has minor teaching involvement in Blocks IV and VI. In Block III, Structure and Development, a format that combines classical "gross" anatomy, microanatomy (histology), embryology, radiology, surgery and physiology is used. In Block V, Neurosciences, neuroanatomy is integrated with neurophysiology, neurochemistry, neurobiology and clinical neurology. In both blocks, lectures are correlated with practical laboratory assignments. In this way, the student is provided with a comprehensive treatment of the subject matter and has ample opportunity to learn its important clinical implications and research applications.

RESEARCH INTERESTS

A major research effort in the areas of developmental neurobiology and neural networks has been added to existing strengths in neurobiology, cellular developmental and reproductive biology. The department will move into a new, state-of-the-art research facility in July 1995. A wide variety of research opportunities leading to the PhD or MD/PhD degrees is made possible by extensive collaborations among departmental faculty and neuroscientists and reproductive biologists in other departments and at other institutions.

Departmental faculty investigate questions from the molecular to the systemic levels, from gene expression through assembly and maintenance of specialized cell-membrane domains, to the establishment and maintenance of multineuronal networks. Biochemical, neuroanatomical, electrophysiological, molecular biological and tissue culture techniques are used together with advanced imaging techniques and immunolocalization by light and electron microscopy.

Anesthesiology

Department of Anesthesiology
The Martin Helrich Professor and Chair
M. Jane Matjasko, MD

As part of the sophomore course given by the department of pharmacology and experimental therapeutics, a discussion group elective "Clinical Practice in Anesthesiology" is

offered to present the core curriculum of the specialty. The course is highlighted by "hands on" laboratory animal demonstrations in the Anesthesiology Research Laboratories.

In addition, during the first two years the department participates in lectures, conferences and laboratory exercises of various preclinical departments such as Physiology and Pharmacology. Such participation is intended to illustrate the direct application of basic science principles to the clinical practice of anesthesiology. Emphasis is placed on the physiologic and pharmacologic basis for the management of patients before, during and after surgery.

Electives of varying orientation and complexity are provided during the clinical years. These include clinical anesthesiology, neuroanesthesia, pain management, critical care medicine and research. Further information and details concerning the elective courses may be found in the electives catalog or by contacting the department chairman.

Research Interests

Research is related to cardiorespiratory function, computer models and pain therapy. Some of the studies underway include:

- Five-year NIH funded study to investigate the effects of anesthesia, posture and surgery on the chest wall and respiratory mechanics.

- A U.S. Navy funded project to examine performance of anesthesiologists in the resuscitation area and operating rooms of the Shock Trauma Center.

- A multidepartmental project to examine new O_2 carrying solutions as blood substitutes in hemorrhagic shock.

All the above respiratory studies involve measurement of physiologic data online. Computer interfacing and analysis play an important role.

Other projects include examination of acinar gas mixing using radioisotope analysis of xenon washout.

Ten faculty members and several resident anesthesiologists are actively participating in laboratory studies. Up to three medical students can be accommodated during the summer with experience provided in instrumentation and anesthesia for laboratory animals utilizing many of the interventions and measurements of cardiorespiratory function used in clinical practice. The students would join ongoing research projects and assist with data collection and analysis.

Biological Chemistry

Department of Biological Chemistry
Professor and Chair
Giuseppe Inesi, MD, PhD

Biochemistry, including molecular biology and gene expression, seeks to understand the phenomena of biology in terms of molecular structure and interaction. It permeates all of

modern biology and medicine and is a fundamental prerequisite to other medical sciences, particularly pharmacology, microbiology, cell biology, pathology and the clinical sciences.

The teaching goal of the department is to present a concise but comprehensive lecture-conference course including as major subjects: proteins, enzymes, nucleic acids, intermediary metabolism, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis, with general reference to cell and molecular biology and genetics.

The department of biochemistry faculty will be involved in teaching in the first-year blocks; Block IV—Cell and Molecular Biology, Block V—Neurosciences and Block VI—Functional Systems.

UNDERGRADUATE MEDICAL PROGRAM

Teaching of cell and molecular biology for medical students is concentrated in a ten-week period in late fall of the freshman year. Activities include plenary lectures, small group conferences with problem-based learning, independent studies and a series of correlative medicine sessions to demonstrate the application of biochemistry to the understanding of human disorders.

GRADUATE PROGRAMS

The department of biological chemistry also offers PhD programs, and a MD/PhD program. Classroom teaching for graduate students include courses in introductory biochemistry and molecular biology, proteins and enzymes, biochemistry seminar, muscle: contractility and excitation-contracting coupling and advanced molecular biology. In addition, several professors are available as advisors for fulfillment of experimental theses in funded research laboratories.

Students with research interest in biochemistry, cell and molecular biology, are encouraged to contact individual faculty members about opportunities for part-time or summer research. Limited funds have been available to support part-time research assistants from the medical school.

FACULTY RESEARCH INTERESTS

Research interests within the department of biological chemistry are numerous and include studies in membrane transport and membrane biochemistry, eukaryotic and prokaryotic molecular biology, virus assembly, enzymology, fluorescence and NMR spectroscopy, Ca2+ regulation mechanisms, receptor mechanisms, hemoglobin biochemistry as well as many others. In addition to the individual research programs of the faculty, the department is widely recognized for its Center of Fluorescence Spectroscopy, under the direction of Dr. Lakowicz; the NIH Program Project on regulation of Ca2+ in muscle, under the direction of Dr. Inesi; and the NIH Program Project on Hemoglobin Substituents, directed by Dr. Bucci.

Dermatology

Department of Dermatology
Professor and Acting Chair
Joseph W. Burnett, MD

The department of dermatology faculty teaches in the first year Structure and Development block and in the second, Immunology, Host Defenses and Pathophysiology and Therapeutics blocks.

DERM 541. Dermatology Elective. Dermatology may be taken as an elective during the fourth year. Students work together with the dermatology residents and attending in the diagnosis and treatment of a large number of patients with cutaneous disorders. Emphasis is placed on developing proficiency in dermatologic examination and description. Students actively participate in grand rounds, daily seminars and the weekly journal club. They also attend the clinical sessions of the Maryland Dermatological Society. A brief oral presentation and short final examination are required.

Advanced Dermatology Elective—to be arranged. Students with a major interest may concentrate or divide their time among the dermatological subspecialties such as dermatopathology, dermatological surgery, occupational or environmental dermatology, or individual research. The students enrolled should have completed their required third year course in an exemplary manner as a prerequisite.

GRADUATE PROGRAM

The University of Maryland has a three year residency program in Dermatology which stresses both the clinical and research aspects of this specialty. One year of internship in a primary care field is required. The usual conferences in a Dermatology program such as pathology, mycology, immunology and allergy, basic sciences, journal club, radiation therapy, pharmacology and clinical textbook review are included in our program.

Diagnostic Radiology

Department of Diagnostic Radiology
Associate Professor and Acting Chair
Philip A. Templeton, MD

Since German physicist Wilhelm Conrad Roentgen discovered the x-ray in 1895, its use has been greatly expanded in our society. With advances in technology, radiology now makes or verifies the diagnosis in three out of four cases of organic disease. With the addition and integration of nuclear medicine, ultrasonography, computed tomography, and magnetic resonance imaging (MRI), diagnostic imaging is playing an even more extended role in diagnosis and selected (interventional) therapeutic procedures.

RESEARCH INTERESTS

Clinical research is the main focus of departmental research activity. The department offers and is pursuing a variety of research in state-of-the-art technologies such as spiral CT, MR imaging, SPECT imaging, teleradiology and picture-archiving and communications system (PACS). Specific projects are the evaluation of MR pulse sequences to improve diagnosis, use of spiral CT to decrease the intravenous contrast dose, and a comparison of the quality of conventional and PACS images.

The department is organized into the subspecialty sections of abdominal imaging, angiography/interventional radiology, chest radiology, musculoskeletal radiology, neuroradiology, nuclear medicine, pediatric radiology and ultrasonography. The subspecialty organization and multiple interdepartmental conferences facilitate collaboration with diverse clinical specialties. Projects include cooperative studies with physicians in the University of Maryland Cancer Center, MR evaluation of renal-pancreas transplants and outpatient drainage and sclerosis of malignant pleural effusions. Other projects are underway, in cooperation with MIEMMS physicians, evaluating the usefulness of CT and MRI in the diagnosis of multiple visceral and skeletal trauma, particularly involving the pelvis and acetabuli. Multiple cooperative cardiovascular nuclear medicine studies are progressing with cardiology.

UNDERGRADUATE MEDICAL PROGRAM

The department of radiology offers the medical student an opportunity to acquire a broad base of knowledge touching on almost all aspects of medicine. Formal instruction begins during anatomy in the first year and pathology in the second year. During the third year, students take the required course RADI 540. The required curriculum is supplemented with small group case discussions with the faculty and contact through interdepartmental rounds and conferences involving radiology as the student rotates on the other clinical services.

Third Year

RADI 540. Basic Radiology. Small groups of students are assigned for a period of three weeks to the department of radiology. The group is subdivided to allow individual instruction as the student rotates through a series of observation periods in selected subspecialties within the department. Students also receive an introduction to the department of radiation oncology. Reading assignments, slide-tape exercises, a student teaching file and lectures form the core of the learning experience. Students attend departmental conferences and some joint conferences with other departments. An objective final examination is included in the course.

Third and Fourth Years

Radiology Elective. Students learn more about properly using diagnostic imaging and interpreting images. The curriculum is flexible, tailored to the needs of the student's career choice. Students are expected to investigate some small aspect of imaging within their area of interest and make a short presentation to the faculty and residents. This presentation and overall performance, as evaluated by the curriculum supervisor, serve as the evaluation criteria for this elective. Students are given the opportunity (in all sections) to perform clini-

cal and/or lab research, correlate imaging evaluations, statistical analysis, literature reviews, etc. RADI 540 is a prerequisite.

GRADUATE PROGRAM

A four-year residency is offered in radiology at the University of Maryland Medical System. Fellowships are offered in computed body tomography/ultrasonography/MRI, interventional and vascular radiology, neuroradiology, critical care trauma, musculoskeletal radiology and chest radiology.

Epidemiology and Preventive Medicine

Department of Epidemiology and Preventive Medicine
Professor and Chair
Paul D. Stolley, MD, MPH

Modern epidemiology is a biomedical discipline at the interface of clinical practice and basic medical science. Preparation for the practice of medicine requires knowledge not only of clinical medicine and basic medical science, but also epidemiology, research methods, biostatistics and social science.

The department is engaged in teaching, research and service across the spectrum of public health and preventive medicine. The faculty has expertise in clinical epidemiology, biostatistics, environmental and occupational medicine, clinical preventive medicine, health services research, outcomes research, aging, behavioral sciences, international health, health economics and medical informatics. Departmental courses, seminars, journal club, clinical assignments and supervised research experiences are offered to enhance the physician's capabilities in these areas of increasing public health importance. Interdisciplinary relationships have been formed with other departments and clinics within the University of Maryland Medical System and throughout the region.

The department introduces principles of epidemiology and biostatistics, clinical research methods, occupational and environmental medicine, organization of the health care system, and ambulatory and clinical preventive medicine in the second, third and fourth years of the medical school curriculum.

MD/PhD students can elect to pursue their PhD degree in epidemiology. Another option for medical students interested in public health is a combined MD/MS degree in preventive medicine.

The department sponsors an ACGME approved two-year residency program leading to board certification in general preventive medicine. The program prepares physicians for positions in federal health agencies, state health departments, hospitals, medical schools, public health institutes and industry, as well as for the practice of clinical preventive medicine.

Many of the graduate courses, tutorials and research experiences are available to medical students during their elective periods. Students are welcome at those departmen-

tal seminars listed in the *Academic Calendar* and journal club, which are scheduled each week through the academic year.

Community service activities of the department are carried out in health planning, research and evaluation through active collaboration with hospital clinics, health departments, governmental agencies and voluntary organizations concerned with public health problems.

RESEARCH INTERESTS

Departmental research activities cover a broad range of faculty interests. Clinical and community intervention studies are directed toward the causes and prevention of major chronic diseases. Environmental and genetic risk factors associated with disability are an area of active research. Research on hip replacement outcomes, as well as treatment of Lyme disease, represent increased attention to the study of medical care effectiveness and outcomes. Behavioral change research, particularly smoking cessation and diet modification, focuses on establishing and maintaining a healthy life style. The department's program of international health operates with Egyptian collaborators and investigates the prevention and control of infectious and tropical diseases. Women's health throughout the life cycle has become a recent research concentration: musculoskeletal and reproductive health are of particular interest.

UNDERGRADUATE MEDICAL PROGRAM

First and Second Years

Biostatistical and epidemiological methods, principles of Occupational and Environmental Medicine, and Organization of the Health Care System are integrated into the systems-oriented instruction in Blocks VII and VIII in the second year. The emphasis is on principles needed by practitioners to critically evaluate the scientific medical literature regarding issues such as disease etiology and diagnostic testing, as well as preventive and ameliorative treatments. These principles are introduced in lectures and applied in exercises in small-group sessions. The exercises complement systems-related material introduced by other disciplines by providing a clinical scenario which requires the understanding and use of relevant epidemiologic principles and research papers to respond to study questions. Working collaboratively with facilitators and colleagues, students critique and present related research papers in their groups. (Drs. Hebel and McCarter and Faculty)

Clinical Years

The applications of preventive medicine to clinical practice are presented in the senior-year ambulatory and clinical preventive medicine combined rotation. Emphasis is placed on the important role of the physician in health promotion and disease prevention. Sessions focus on risk factors for the leading causes of death and disability in the United States and on important issues in health care policy affecting physicians and their patients. Students also present patient management cases and prepare preventive medicine projects. Students assigned to Western Maryland and Eastern Shore sites participate in class sessions via interactive video. (Drs. Havas, Scherlis, Sherwin, Strickland and Clinical Faculty)

Electives

Elective opportunities are available for medical students, including tutorials with selected faculty members, supervised research experiences and field experience. Among current offerings are the following:

PREV 541. Introduction to Public Health Practice (Dr. Rubin)

PREV 542. Tropical Medicine and International Health (Dr. Strickland)

PREV 543. Occupational Health Field Experience (Dr. Keogh)

PREV 544. Occupational Health Hazard Investigation (Dr. Keogh)

PREV 545. Health Problems in Developing Countries (Dr. Strickland)

PREV 589. Research in Epidemiology and Preventive Medicine (Dr. Rubin)

FELLOWSHIPS AND HONORS PROGRAMS

Summer fellowships and honors programs in preventive medicine are available to a limited number of students. Each student works closely with a faculty member and undertakes a research project in some aspect of preventive medicine or epidemiology. Students also participate in departmental seminars, journal club and workshops that enhance interaction with faculty members, residents and other students. Elective credit may be given upon completion of project requirements.

GRADUATE AND POSTGRADUATE STUDIES

The department's graduate program consists of a PhD in epidemiology and an MS in preventive medicine, as well as the MD/PhD and MD/MS combined degrees available to medical students. Work toward the PhD in the combined MD/PhD degree will normally occupy at least three years between the second and third years of medical school. Stipends are available to support one or two MD/PhD students. The combined MD/MS may require one year in addition to the usual four-year medical school curriculum.

The department has a postgraduate two-year residency program in general preventive medicine leading to eligibility for certification by the American Board of Preventive Medicine. The residency provides a variety of individually planned opportunities for advanced study and practice in epidemiology, biostatistics, computer science, health care administration, gerontology and occupational health. Components of the residency program include required and elective graduate-level courses, a variety of seminars, journal club and workshops, supervised research experiences and field placements in public health or research settings. Course work leads to a Master of Science degree in preventive medicine.

In cooperation with the departments of medicine, pediatrics, family medicine and other clinical departments, combined residency programs may be arranged for qualified applicants leading to board-eligibility in both preventive medicine and a clinical specialty.

Family Medicine

Department of Family Medicine
Associate Professor and Chair
Herbert L. Muncie Jr., MD

The department of family medicine educates family physicians to render high-quality medical care to individual patients and families of all ages in a continuous and comprehensive manner. Family physicians are responsible for patient care at the point of entry into the health care system; providers or coordinators of health care at the secondary and long-term care phases of illness; and coordinators of tertiary care.

The department offers educational experiences in family medicine for students at the University Family Practice (office site of faculty), on the Family Practice Inpatient Service and through an interdisciplinary, longitudinal educational program that is guided by a staff of experienced family physicians. Moreover, students may participate in community health services and supervised practice experiences and in health care research.

Within the discipline of family medicine, several areas are emphasized. The department has a Division of Geriatrics that dates back to 1974 and is a national leader in geriatrics education. It was the first specifically dedicated Division of Geriatrics on this campus. Multiple programs, both departmental and interdisciplinary, are in place or being formulated. The Supportive Care Unit is a unique model for rehabilitation of frail, elderly patients following an acute hospital stay, focusing on optimization of function with a discharge goal of returning patients to home or to the least restrictive environment. The broad spectrum of the division's educational, research and patient care efforts includes the pre-elderly well, the hospitalized elderly, the frail homebound elderly and the chronically incapacitated, aged patient. The division provides regular housecalls for 150 frail homebound elderly, the largest program in the city. The Division of Geriatrics is a leader in the field of quality assurance in long-term care facilities. Expansion of facilities and activities to continue eminence in this area is in progress.

The department has a major focus on providing health care to underserved patients and communities. The program involves community outreach and disease prevention.

RESEARCH INTERESTS

The research efforts of the department of family medicine reflect the broad interests of the department's faculty. Current projects, which are clinically oriented and relate to current medical problems, range from epidemiologic studies to evaluations of specific therapies. The department has a strong interest in health promotion and nutrition, especially as they relate to the family and the elderly. The department concentrates on investigating ways to improve the health of our communities. Collaborative efforts with other departments involve investigations into health promotion, infections in the elderly, abdominal pain, informed consent and osteoarthritis. During their last year of training, all Family Medicine residents are required to complete a research project and to present their results at the Annual Family Medicine Residents' Research Day. The department faculty, fellows and residents present their research at national meetings, and in journals, books and other publications.

Minimester Electives. During the summer months, students may elect to spend time in the office of a selected family physician in order to observe the varied professional activities of a physician practicing in the community. During preceptorship experiences, students may participate in direct patient care or primary health care research.

Family Care Track Program. The Family Care Track (FCT) is an elective undergraduate experience designed to teach medical students the principles of family medicine with a focus on the urban, poor, multi-problem family. It provides a continuous clinical experience through all four undergraduate years. Students are assigned to follow three families over four years in the department's Family Practice Centers. The families are selected to provide exposure to obstetric, pediatric and geriatric care, and to family dysfunction. Supervision is provided to the individual student and through the use of small group integration seminars for case discussion. The students also are required to complete a community medicine seminar series, a social services preceptorship, a needs assessment, a community project, and a four-week clinical preceptorship in sites, including some located in health-professional shortage areas.

Up to 20 students are selected each year from the freshman Longitudinal Elective in Family Medicine to participate in the Family Care Track Program. Credits for this elective include four weeks of senior elective credit at the completion of the program.

Senior Elective in Family Practice. In this elective, students work with a community family physician preceptor. They have the opportunity, under supervision, to manage problems typical of a busy practice, ranging from obstetrics to geriatrics. Here, there is ample opportunity to be involved in coordinating continuous care of patients over a four-to six-week period. Students begin to understand the patient in relation to family, job and environment. Furthermore, the student observes the role of the physician in society, the social and civic obligations and responsibilities to the patient. Site options range from urban health manpower shortage sites to rural private practice. In these varied settings, students are expected to conduct a limited clinical investigation, using data collected in the practice, and to attend weekly Alcoholics Anonymous or Al-Anon meetings in the community.

Senior Internship in Family Practice. The department of family medicine offers an eight-week internship to senior students. This is an extensive inpatient experience utilizing the family medicine inpatient service. Variety is a major attraction as the patients' needs range from newborn care and obstetrics to adult general medical and geriatric care. The student is exposed to the family practice approach to inpatient care with an emphasis on interdisciplinary, comprehensive and continuous care and participates in night and weekend call. Students may choose to accomplish the rotation at University Hospital or Union Memorial Hospital. The rotation at Union Memorial is primarily an internal medicine experience.

Senior Ambulatory Clerkship in Family Practice. Students may select the Family Health Center as an option in the required Senior Ambulatory Course. This eight-week rotation exposes students to the clinical practice of the department of family medicine residency pro-

gram. In this setting, students are scheduled to see patients daily in the Family Health Center, work with a variety of preceptors from the department of family medicine and participate in didactic sessions. This ambulatory experience is designed to expose students to the principles and practice of family medicine.

GRADUATE MEDICAL PROGRAM

The University of Maryland's approved three-year residency in family practice is one of the oldest in the nation. Approximately 39 residents are enrolled in a three-year program. The program's goal is to provide comprehensive training in the specialty, utilizing the latest information and educational methods. Resident training takes place both at University Hospital, where the expertise of faculty in all specialties can be utilized, and in several community hospitals where the residents are exposed to a wide variety of patient problems. Flexibility is maintained through the availability of electives in order to accommodate specific needs of the trainee. Although the majority of graduates are actively engaged in family practice in rural, suburban and urban areas, a significant number are pursuing academic careers.

Medicine

Department of Medicine
The Theodore E. Woodward Professor and Chair
John A. Kastor, MD

Professor and Vice-Chair
Philip A. Mackowiak, MD

The department of medicine, or internal medicine as it is called in some schools, teaches the body of medical knowledge that enables one to diagnose and treat the illnesses of adults primarily with medicines rather than with operations.

The practitioner of internal medicine is usually called an internist, but he or she may be referred to by the title *physician*, in the specialized use of the word, which can also be applied to any medical doctor. An internist may be a cardiologist, an endocrinologist, a gastroenterologist, a rheumatologist or a practitioner in one of the dozen or so specialties of internal medicine. But the internist always remains the physician (or the *diagnostician* as internists were called in former times) whose special competence is solving difficult diagnostic problems and personally applying, or obtaining from a colleague, the best treatment available.

The term internal medicine, which derives from the German *Innere Medizin*, was first used during the nineteenth century when many American physicians travelled to Germany and Austria for training in what were then the leading clinics and medical laboratories. According to one medical historian, "Within a decade or so after 1880, internal medicine was differentiated from ordinary clinical medicine, the simple natural history of disease, by emphasizing that it was based on experimental work in physiology and physiochemistry." Internists have always required special training to acquire their knowledge and skills and have continuously shown a particular interest in the scientific basis of clinical work.

Educating medical practitioners for the state and the nation is the principal training responsibility of the faculty of the department of medicine, but it is also our aim to develop in some students a desire to make useful discoveries through basic or applied research. Fundamental advances in the causes and treatment of disease have often been made by internists; for example, the work on cholesterol metabolism which in 1985 brought the Nobel Prize in Medicine and Physiology to two internists, one a gastroenterologist and the other a geneticist. In keeping with this traditional devotion to the value of research, the department of medicine provides many opportunities for students to participate in research and strongly encourages all who may have an interest to experience the work of the investigator in one of our laboratories.

UNDERGRADUATE COURSES

First and Second Years

The department of medicine faculty teach in the first-year Neurosciences and Functional Systems blocks, and in the second-year Pathophysiology and Therapeutics, and Immunology, Host Defenses, Infectious Disease, Epidemiology and Preventive Medicine blocks.

Second Year

PDIA 520. History and Physical Examination. Eliciting an accurate story of the patient's complaints (the history) and detecting abnormal findings by physical examination constitute the fundamental skills of every physician. To acquire these abilities, students attend introductory lectures from members of the faculty; afterwards, groups of two students meet weekly with instructors in one of the University of Maryland's teaching hospitals. The students interview and examine patients with a wide variety of illnesses and then discuss the findings with their teacher who correlates the observations with pathophysiological abnormalities being studied in basic science courses. The course also includes small group sessions with instructors from neurology, pediatrics and psychiatry. This will be incorporated into the Introduction to Clinical Practice block given longitudinally in the sophomore year of the "new curriculum."

Third Year

MEDC 530. Clinical Clerkship. This is the fundamental course in internal medicine for medical students. The clerkship is 12 weeks in length and consists of eight weeks of inpatient internal medicine and 4 weeks of ambulatory internal medicine. For eight weeks, the students work with the medical teams caring for inpatients at two of the department's three primary teaching hospitals: University Hospital and the Baltimore Veterans Affairs and Mercy Medical Centers. Students join the interns, residents, and nurses for work rounds at 8:00 a.m. and participate in daily rounds with their attending physician from the faculty at 9:00 a.m., Monday through Friday. Conferences are held daily; some are case-based sessions facilitated by members of the faculty and are designed to teach problem solving ability. During other sessions, students join the house staff and faculty at Medical Grand Rounds, Morbidity and Mortality, and Ambulatory Conference. During the afternoons and evenings, clerks participate in the team's care of patients. Time is spent obtaining histories, performing physical examinations, obtaining and evaluating other aspects of the patient's database, and developing diagnosis and treatment programs with the house staff and faculty. During the four weeks of ambulatory medicine, students are assigned to one of several university-

based or community sites. The goal of this rotation is to introduce students to the basic concepts of ambulatory medicine. These include problem focused assessments, decisions about urgency, and principles of access and continuity of care. Students may spend time in acute walk-in clinics, general medicine and primary care clinics, as well as selected subspecialty clinics.

Fourth Year

MEDC 548. Student Internship (Subinternship in Medicine). Each fourth-year student takes a subinternship in medicine, pediatrics, surgery or family practice. The student internship in internal medicine occupies four-to-eight weeks (based on student selection), all of which must be spent on the general medical services at University Hospital or the Baltimore Veterans Affairs Medical Center. Student interns work as if they were graduate physicians but under the close supervision of the resident and attending physicians. Subinterns are on-call in the hospital with their resident physicians one out of four nights. The amount of responsibility delegated to subinterns depends upon the extent of each student's knowledge, dedication and maturity. Successful completion of a subinternship in medicine prepares students particularly well for graduate internships.

Laboratory and Clinical Research Electives. The faculty of the department of medicine strongly encourages all students to join them on a full-time or part-time basis to participate in research projects being conducted in the department. This experience may be scheduled at most times of the year. Students with an interest in investigation should talk with members of the faculty or the chairman about the many opportunities for this work available in the department of medicine.

GRADUATE PROGRAM

Residency Training. Training in internal medicine continues after graduation from medical school in the department's residency program. Approximately 35-40 graduates from leading medical schools are appointed to first year residency positions on a competitive basis. Residents receive their training at University Hospital and Baltimore Veterans Affairs and Mercy Medical Centers in addition to numerous ambulatory sites. Most first year residents continue their training in internal medicine for an additional two years, thus becoming eligible for certification as diplomates of the American Board of Internal Medicine. All residents receive intense clinical training in primary care and the medical subspecialties in a variety of ambulatory and inpatient settings under close guidance of the department's faculty. While completing the broad core curriculum, residents have the opportunity to explore clinical and basic science research areas or engage in individualized electives. Residents are expected to develop their leadership, teaching and professional skills while gaining expertise in the vast expanse of internal medicine.

CARDIOLOGY

Division of Cardiology
The Herbert Berger Professor of Medicine and Head
Robert A. Vogel, MD

UNDERGRADUATE COURSES

Fourth Year

CARD 541-01. Clinical Cardiology Elective, University Hospital. Students participate in patient evaluation and examination under the close supervision of faculty members. Basic concepts of physical examination are stressed and correlated with both noninvasive and invasive techniques. The rotation includes an opportunity for adult and pediatric cardiology training in the clinics, coronary care unit and graphics laboratory with emphasis on complete patient evaluation, as well as the development of individual areas of interest.

CARD 541-07. Cardiology Elective, Baltimore Veterans Affairs Medical Center. Students spend one month participating fully in all activities of the clinical cardiology service. Experiences include medical and surgical consultations, cardiology clinic, daily readings of electrocardiograms and echocardiograms. Special student-oriented conferences on clinical and research topics in cardiology are regularly held.

POSTGRADUATE FELLOWSHIPS

Selected applicants participate in the activities of the division including responsibilities for cardiac catheterization, electrocardiographic interpretation, echocardiography and exercise testing. The fellowships begin July 1 of each year and financial stipends are provided. Application is made through the head of the division and should be completed by November of the preceding year.

ENDOCRINOLOGY

Division of Endocrinology
Professor and Head
John F. Wilber, MD

UNDERGRADUATE COURSES

Second Year

PATH 520. In the second semester an intensive two-week course is given in collaboration with the departments of pathology, pharmacology, pediatrics and ob-gyn. The course emphasizes the pathophysiologic basis for clinical disturbances of endocrine function.

Summer fellowships of eight to 10 weeks are also offered. These emphasize clinical or basic research training, including molecular biology.

Fourth Year

ENDO 541. Clinical Endocrinology and Metabolism Elective. Seniors are provided a broad clinical experience through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. Students are involved in the day-to-day diagnostic evaluation and management of both hospitalized patients and outpatients, and participate in weekly clinics under the direct supervision of staff members. The pathophysiologic basis for diagnostic and management aspects is presented at daily rounds and at weekly in-depth conferences, Grand Rounds, and journal club. A separate elective of 12 weeks is also available to interested students who may desire a longer period of training and/or wish to pursue a clinical or laboratory research project in depth.

POSTGRADUATE FELLOWSHIPS

Full-time positions are available to selected candidates who have usually completed two or more years of house officer training. Fellows all conduct independent clinical or basic research programs with graduated autonomy. Broad clinical inpatient and outpatient activities are designed for subspecialty board preparation. Academically oriented fellows are sent to the Endocrine Society Research Training program during Year I. Applications and interviews are required and competitive stipends are offered.

GASTROENTEROLOGY

Division of Gastroenterology
Professor and Head
Stephen P. James, MD

UNDERGRADUATE COURSES

First and Second Years

Minimester in Liver Disease. Twenty-four hours devoted to selected topics and current pathophysiology and treatment concepts in clinical liver disease. Twelve topics, including jaundice, ascites, hepatic coma and portal hypertension are treated in depth.

Fourth Year

GAST 544-01. Clinical Elective. A broad clinical experience in consultations, literature review and conferences on GI and liver problems. Students evaluate consultations with GI fellows and senior staff, plan diagnosis and management, and follow patients through definitive treatment and discharge. The rotation includes attendance at four hours of conference, 10 hours of GI clinical rounds and four hours of clinic experience weekly.

Summer Research Electives. GI, liver and nutrition electives are available and may carry a stipend. Individually arranged.

GENERAL INTERNAL MEDICINE

Division of General Internal Medicine
Assistant Professor and Acting Head
Louis J. Domenici, MD

Our concept of the general internist at this institution is that of an individual who is: 1) skilled in all facets of health care, both acute and chronic, as well as the ambulatory and inpatient level; 2) an educator of peers, students and the public; 3) interested in the impact of health care delivery and its evaluation; 4) an able administrator capable of management decision making and planning; 5) an active participant in the affairs of the community. In addition, the division of general internal medicine provides education, clinical training and research experience for medical students and graduate trainees to the fellowship level.

The goal of the General Internal Medicine Program is to prepare physicians through inpatient, ambulatory and elective experiences during the students' clinical years that continues with an extensive graduate medical education program. The division's faculty deliver a wide range of primary and consultative health care services for ambulatory and hospitalized patients at university clinical sites, which are also used for student and resident medical training. These clinical sites offer health care to university campus professionals, senior, veterans, and the inner city indigent.

RESEARCH INTERESTS

The research interests within the division are broad and include curriculum development and evaluation in ambulatory education, utilization of health care by the elderly, evaluation of physician and patient behavior relevant to preventive practices, occupational exposure to asbestos and lead, nutrition among hospitalized patients, and areas of primary care services to women.

UNDERGRADUATE COURSES

Selected ambulatory primary care elective experiences are offered as part of the senior ambulatory rotation in internal medicine, and there are clinical and research electives in medical consultation or on specific projects with faculty. For further information, consult the medicine section of the electives catalog. These experiences are offered on the UMAB campus and at affiliated medical institutions.

GRADUATE PROGRAM

The graduate medical education program in internal medicine educates and trains physicians in the principles and practices of general internal medicine. Our intent is to prepare clinicians by providing training via a broad internal medicine curriculum. Specialized training experiences are encouraged and are presently available in medical consultation and risk assessment, preventive care, rehabilitation or occupational medicine, as well as health ser-

vices research. Students and residents are supervised by a team of clinician educators, practitioners and scientists in the program. The faculty include general internists, geriatricians, psychiatrists, epidemiologists, clinical pharmacists, primary care nurse clinicians and social workers.

GEOGRAPHIC MEDICINE

Division of Geographic Medicine
Professor and Head
Myron M. Levine, MD, DTPH

GRADUATE PROGRAM

Postgraduate fellowships in geographic medicine are offered in conjunction with the division of infectious diseases. Fellows spend their first year doing clinical rotations on the infectious diseases consultation services at the University Hospital, the Baltimore Veterans Affairs Medical Center, the Maryland Institute for Emergency Medical Services Systems and the University of Maryland Cancer Center. The second year is spent in clinical or laboratory research under the supervision of faculty members in the division.

Research may be conducted in the laboratories of the division in Baltimore or in one of the division's field areas in Chile, Peru or Venezuela. The division is closely tied to the Center for Vaccine Development. Laboratories are fully equipped for work in molecular genetics, immunology, antigen purification, routine and enteric microbiology, parasitology (including animal studies) and antimicrobial sensitivity testing. Faculty research interests include the pathogenesis and epidemiology of enteric organisms such as *Vibrio cholerae* and other *vibrios*, *E. coli Salmonella*, *Shigella*, *Yersinia*, *rotavirus*, *Giardia* and *Cryptosporidium*. Much of the research effort is directed towards developing vaccines against these enteric pathogens as well as vaccine testing against malaria and AIDS. The division maintains a close relationship with the department of epidemiology and preventive medicine where fellows may take courses in epidemiology and biostatistics during their training. Application for fellowships is made to Dr. J. Glenn Morris, fellowship program director.

GERONTOLOGY

Division of Gerontology
Professor and Head
Andrew P. Goldberg, MD

The goals of the gerontology division at the University of Maryland School of Medicine are to teach students and house staff the principles of gerontology and geriatric medicine and to train fellows and junior faculty for academic careers in gerontologic research and clinical geriatric medicine at university medical centers. Research and clinical training are guided by the principle that the division should advance the knowledge base necessary for the practice of geriatric medicine and research in basic aspects of gerontology. Our long-term goal is to translate research into clinical strategies that provide optimal medical care for the elderly. The gerontology division provides broad-based clinical and research train-

ing in geriatric medicine to medical students, house staff and fellows. There is a strong emphasis placed on clinical research and biomedical investigation in the biology of aging and the prevention of cardiovascular disease in clinical trials, which examine the effects of exercise training and nutritional interventions on the functional capacity of older patients. This enriched academic environment allows trainees to learn skills of clinical and basic biomedical investigation for careers in gerontology and clinical geriatric medicine.

MEDC 545-23. Geriatric Medicine Elective. There is a wide spectrum of research, clinical and educational programs for students, house staff, fellows and physicians interested in clinical training and research in gerontology and geriatric medicine. There are opportunities for research training in: 1) exercise physiology and nutrition in the management of cardiovascular disease risk factors in high-risk older patients; 2) rehabilitation and longitudinal management of the elderly to maintain independence and prevent institutionalization; and 3) basic mechanisms of age-related declines in cardiovascular, metabolic and musculoskeletal function. Trainees work closely with faculty members in a research curriculum that provides mentored training in clinical and basic scientific investigation and in the conduct of clinical trials. A Geriatric Research Education and Clinical Center (GRECC) provides resources for training in basic, biomedical, clinical and health services research focused on the prevention of cardiovascular disease in the elderly and the rehabilitation of frail elderly with stroke, multi-system disease and geriatric syndromes. Academic programs in the GRECC seek to increase the basic knowledge of the aging process and prevention of cardiovascular disease through targeted interventions. Knowledge gained from these studies is imparted to health care providers, students and trainees through system-wide educational programs.

The clinical programs teach trainees to manage healthy older people as well as patients with a wide spectrum of acute and chronic medical diseases. Instruction is provided in primary, consultative and long-term care of patients in various clinical facilities of the University of Maryland Medical System. Trainees learn the physiology of aging and principles of geriatric assessment, treatment and care of the elderly in ambulatory medical practices, on acute in-patient services, in geriatric rehabilitation units and in a comprehensive home care program for frail, home-bound patients. There is clinical training in geropsychiatry to learn counseling, psychopharmacologic and ethical issues in the management of older patients with mental illness. This approach provides wide clinical exposure and training in relevant skills for an academic career or clinical practice in geriatric medicine.

POSTGRADUATE FELLOWSHIP TRAINING

The division has an accredited fellowship training program funded by the National Institute on Aging that focuses on research examining the effects of exercise and nutritional interventions on the pathophysiology of type II diabetes, hypertension, hyperlipidemia and changes in body composition with aging. Post-graduate training emphasizes biomedical and clinical research in the pathophysiology of aging-related diseases and the prevention of cardiovascular disease and disability through exercise and dietary rehabilitation so at-risk elderly are able to improve functional independence. Fellows completing post-graduate training in gerontology are eligible for board certification in geriatric medicine.

HEMATOLOGY AND ONCOLOGY

Division of Hematology/Oncology
Professor and Head
David A. Van Echo, MD

UNDERGRADUATE COURSES

Fourth Year

HEMA 541-01. Clinical Elective. Broad clinical experience in both malignant and non-malignant hematologic disorders is available. Students perform hematology consultations with fellows and senior staff and have the opportunity to attend multiple clinical and laboratory conferences within the University of Maryland Cancer Center. Extensive experience in bone marrow aspiration, biopsy and interpretation is provided. Rotations are for a minimum of four weeks.

MEDC 549-01. Medical Oncology Electives. Two different medical oncology electives are available: 1) students may choose a subinternship on the inpatient service of the University of Maryland Cancer Center. This provides students and postgraduate physicians with in-depth studies of the diagnosis, natural history and treatment of human cancers. Students will take an active role in the day-to-day management of patients on an inpatient cancer ward and will work closely with the attending and hematology/oncology fellow; 2) clerkships in oncology provide close interactions with fellows and oncology attendings on the oncology consult service. The wide diversity of internal medicine diseases seen during the natural history of many cancers makes this an intense course in the treatment of many internal medicine problems common to adult patients. Clerkships on the medical oncology consultation service provide interaction with other specialties in the management of as yet undiagnosed patients as well as the early detection, diagnosis and staging of malignancy. Individuals on clerkships are expected to attend a large number of conferences available on a weekly basis that provide didactic information about natural history, new treatments and evolutionary changes in the laboratory understanding of neoplasia.

Research Electives. Summer research electives in various aspects of hematologic malignancies are available. Opportunities are available to work in the cell component therapy section of the University of Maryland Cancer Center (a specialized transfusion service), an active cytogenetics laboratory, an immunology laboratory studying antigenic characteristics of malignant cells, as well as the acquired immune deficiency syndrome (AIDS), electron microscopy laboratory and laboratories engaged in the study of leukemic cell differentiation and cellular pharmacology. Stipends may be available.

HYPERTENSION

Division of Hypertension
Associate Professor and Head
Elijah Saunders, MD

UNDERGRADUATE COURSES

First and Second Years
Selective lectures are given on hypertension as a part of the physiology, pharmacology, pathology and preventive medicine courses.

Fourth Year
Electives are available for fourth-year students. Students electing this course will be exposed to and participate in the entire program of the hypertension division. This includes experience and supervision in the diagnosis and treatment of hypertensive patients, on both an inpatient and outpatient basis. Daily rounds by senior members of the hypertension division will include students electing this rotation. Students will attend the Hypertension Clinic and also participate in the care of private patients in a very busy office devoted to the care of difficult hypertension problems. Students will participate in ongoing clinical research programs when appropriate. Students may also elect to attend the weekly cardiology clinical rounds sponsored by the cardiology division and the bi-weekly or monthly Hypertension and Vascular Biology Center research rounds.

SUMMER FELLOWSHIPS

Summer fellowships in hypertension are available to junior and second-year students (who have taken physical diagnosis). Participation in clinical drug trials will be offered.

GRADUATE PROGRAM

Electives for a minimum of one month are available for house officers-in-training at the University Hospital as well as other hospitals in the region. Electives are encouraged for residents interested in cardiology, nephrology or endocrinology as well as a career in internal medicine with emphasis on hypertension. Trainees will have an opportunity to work with hypertension specialists from the Johns Hopkins University School of Medicine and School of Hygiene and Public Health, the state Department of Health and Mental Hygiene, the Hypertension Commission of Maryland, the American Heart Association and other disciplines in the community which have an interest in hypertension.

Although the hypertension division does not currently have a fellowship program, training opportunities for fellows from other divisions can be arranged.

INFECTIOUS DISEASES

Division of Infectious Diseases
Professor and Head
John W. Warren, MD

UNDERGRADUATE COURSES

Fourth Year

INFE 541-01. Infectious Diseases Elective. The discipline of infectious diseases is uncommon in internal medicine in that it is not restricted to one organ system. Indeed the types of patients seen by the Infectious Diseases Consultative Service are patients in virtually all departments of the hospital. These patients are often among the most acutely ill and often pose the most difficult diagnostic enigmas within the hospital. These presentations are more than an academic challenge; many infectious diseases can be cured and the patient restored to previous health.

A practical working knowledge of clinical infectious diseases has become absolutely critical for the following reasons: (1) we have seen a huge increase in the numbers of immunosuppressed people, not only from HIV infection but also from the substantial increase in bone marrow and solid organ transplant recipients, the more aggressive use of cytotoxic chemotherapy and more invasive and life-sustaining ICU modalities; (2) the explosion of new antiviral, antifungal and antibacterial agents requiring us to be familiar with their spectrum of action and toxicities; (3) the proliferation of multiple-antibiotic resistant pathogens which presents us with virtually untreatable infections; and (4) the focus upon infection control, cost containment and quality of practice which have arisen with the increased attention to the economics of health care.

The diagnosis of infections and proper management of patients with these diseases are taught by exposure of the student to a broad spectrum of clinical problems. The appropriate use of microbiology, virology and serology laboratories will be stressed. The student will see consultations under the supervision of a full-time attending at either the University Hospital or Veterans Affairs Medical Center. Specialized programs are available in AIDS, pediatrics, at Shock Trauma and at the University of Maryland Cancer Center. Two clinical infectious disease conferences for faculty, house staff and students are held weekly.

POSTGRADUATE FELLOWSHIPS

The postgraduate fellowship is a combined program offered by the divisions of infectious diseases and geographic medicine. The first year is clinically oriented and is spent consulting on patients with problems related to infectious diseases. A very diverse experience is obtained through rotations at the University Hospital and Veterans Affairs Medical Center, the Shock Trauma Center, the University of Maryland Cancer Center, the solid organ transplant service, the inpatient HIV unit and the NIH. Fellows see consults and supervise residents and medical students; and spend much of their time teaching and providing patient care. This is all performed under the guidance of full-time faculty, many of whom are experts in subspecialties within infectious diseases, such as infections in transplant recipients, neutropenic host infections, surgical infections and infections in HIV-infected people. The second and subsequent years of the program are oriented toward research. Research interests in the division include molecular pathogenesis of bacterial infections,

physiology of acute inflammation, CMV, HIV, papilloma virus infections, infections in cancer patients or severely traumatized patients, nosocomial infections and mechanisms of action and pharmacokinetics of antibiotics. Research interests within geographic medicine include microbial genetics, pathogenesis of diarrheal diseases, pathogenesis of malarial infections, and vaccine development. Application is made through the fellowship program director.

NEPHROLOGY

Division of Nephrology
Medical School Professor and Head
Matthew R. Weir, MD

UNDERGRADUATE COURSES

Second Year

MEDC 525. Human Renal Physiology. This one-month minimester course allows full-time concentration on renal and body fluid physiology with the students using themselves as laboratory subjects. Studies of renal function under different circumstances, mechanisms of water conservation, sodium balance and acid-base balance will be studied. Laboratory sessions are held daily. Appropriate case presentations will illustrate disturbances of physiology. This class is limited to 16 students and offers an opportunity for prolonged and close contact with division of nephrology faculty as well as experience in laboratory measurements and observations of renal function through personal in vivo testing.

Fourth Year

NEPH 541-01. Clinical Nephrology Elective. Students who have completed their required junior electives in medicine, surgery, pediatrics and obstetrics may elect a clinical rotation in nephrology. One-month to three-month electives will be accepted. The student is expected to become thoroughly familiar with the approach to patients with kidney diseases and acquainted with clinical procedures. Each student will present at one nephrology conference. The typical rotation involves the student in seeing consultations with fellows and attending nephrologists, rounds on inpatients, Renal Clinic activities and exposure to the dialysis program. Students with special interests in particular aspects of kidney function or kidney disease may be permitted to pursue those interests after consulting with the division head.

NEPH 541-03. Nephrology Student Fellowship Elective, Maryland General Hospital. Students are exposed to the practice of clinical nephrology and to the management of acute and chronic renal failure.

POSTGRADUATE FELLOWSHIPS

Qualified physicians may apply for full-time fellowships in nephrology. Although a one-year clinical fellowship may be specially arranged, the standard fellowship is for two years of training with the first year structured to produce broad experience in clinical nephrology, its procedures and its literature and basic experience in the research lab. The second year is largely elective, permitting fellows to pursue their chosen direction with planning and supervision.

Additional years of experience for those undertaking special projects are available. Fellows completing this program are qualified and prepared to be certified in nephrology.

PULMONARY AND CRITICAL CARE MEDICINE

Division of Pulmonary and Critical Care Medicine
Professor and Head
Lewis J. Rubin, MD

UNDERGRADUATE COURSES

First Year
Members of the division take part in teaching the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine and the sessions in the course on correlative medicine.

Second Year
In the systemic pathology course, two weeks are devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology and microbiology and is closely correlated with the teaching of physiology and pathology. This is not a course in respiratory diseases, but the most common and important groups of diseases are included.

Fourth Year
PULM 541-01. Pulmonary Diseases Elective. Fourth-year students participate in all of the activities of the division under the supervision of fellows and faculty. They see patients in the wards, in consultations and in the outpatient clinic. The students learn to interpret tests of pulmonary function and attend all of the conferences in which fellows and faculty participate. The emphasis is on the correlation of clinical features with pathophysiologic and roentgenographic features.

PULM 541-05. Medical Intensive Care Elective, University of Maryland Hospital. The goal of this course is to provide students with clinical experience in managing patients seen in a medical intensive care unit. Students will function at the intern level as primary physicians and will work with the resident in charge, as well as the attending physician. Students will receive a sound background in circulatory and respiratory physiology. They will be exposed to various invasive techniques, including arterial line insertions, Swan-Ganz catheterizations and chest tube placements. In addition there will be exposure to the use of mechanical ventilation in the critically ill patient.

POSTGRADUATE FELLOWSHIPS

Stipends are available for the support of nine fellows at the current University of Maryland Medical System postgraduate scale. Three years of training in internal medicine are required. The goal of the program is to train physicians who are competent in the subspecialties of pulmonary and critical care medicine, and in basic or clinical investigation.

RHEUMATOLOGY

Division of Rheumatology
Professor and Head
Barry S. Handwerger, MD

UNDERGRADUATE COURSES

First Year
Members of the Rheumatology Division participate in teaching the immunology section of the microbiology course and in the pathology and biochemistry courses.

Third Year
During their rotation on medicine at UMMS or the VA Medical Center, junior medical students interact with rheumatology faculty and fellows on the rheumatology consult service. Weekly rheumatology grand rounds and weekly joint conferences are open to students.

Fourth-Year Students and House Officers
The rheumatology division offers a clinical elective for senior medical students and medical house officers designed to present the spectrum of rheumatic disease and approaches to diagnosis and management. Integration of clinical features with the mechanisms of disease processes is accomplished through informal tutorial sessions as well as didactic lectures. The rationale for the various management programs including drug therapies, physical medicine and orthopedic surgery is emphasized. Experience is gained in performance of diagnostic procedures (e.g., arthrocentesis) and in interpretation of relevant laboratory data.

POSTGRADUATE FELLOWSHIPS

The division of rheumatology and clinical immunology offers a two-year clinical fellowship and a three-year fellowship that emphasize training in both the clinical and research aspects of rheumatology. The purpose of the three-year fellowship is to produce physician-scientists who are well trained clinically and scientifically and who are dedicated to an academic, research-oriented career. Three years of prior training in internal medicine are required.

Microbiology

Department of Microbiology and Immunology
Professor and Chair
Jan Cerny, MD, PhD

Training in microbiology and immunology within the medical school curriculum occurs primarily during the sophomore year when all students are required to take medical micro-

biology and immunology. Emphasis is placed on medical aspects of microbiology and immunology. In addition, selected Graduate School courses are available to medical students in all years. Individual faculty members are available to provide instruction and guidance throughout the medical curriculum.

The department also offers the PhD degree and encourages students to enroll in the MD/PhD program.

RESEARCH INTERESTS

The research programs within the department of microbiology and immunology are oriented toward the molecular biology of infectious agents, foreign invader-host cell interactions and the molecular and cellular analysis of the immune response. Specific projects in immunology and cell biology include molecular analysis of antibody and T-cell receptor genes; lymphocyte activation, differentiation and ontogeny; autoimmune diseases and immunology of aging; and cellular and viral oncogenes. Projects on microbial disease mechanisms include studies on regulation of gene expression in procaryotic and eukaryotic systems, molecular genetics of pathogenic bacteria; studies on latent virus infections including the human immunodeficiency virus; pathogenesis of vector-borne infectious agents; and new strategies for development of vaccines. Medical students are encouraged to participate in elective research programs of their interests.

UNDERGRADUATE MEDICAL PROGRAM

Second Year

Microbiology and immunology faculty have major teaching responsibility in the second-year Immunology, Host Defenses, Infectious Diseases and Epidemiology and Preventive Medicine block (Block VII). This is the first block of the second year and is eight weeks in duration. When appropriate, faculty also participate in teaching the Pathophysiology and Therapeutics block (Block VIII).

A number of Graduate School courses are available to qualified students. Interested students should contact the department for details.

Neurology

Department of Neurology
Professor and Chair
Kenneth P. Johnson, MD

Neurology is the study of the normal and diseased nervous system that includes central, peripheral and neuromuscular systems. Faculty members participate in courses in all four years of undergraduate medical education. Though few medical students will choose careers specializing in medical or surgical neurology or in the basic neurosciences, all medical graduates must have substantial understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological

specialist. Of special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

The discipline of neurology has maintained close ties with basic science and, by its complex but logical nature, has typified the most scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically oriented specialty that is represented in the philosophy and goals of this department.

RESEARCH INTERESTS

Research activities at both the basic neuroscience and the clinical levels play a central role in the activity of the department. A broad program in neuroimmunology and biology includes a Demyelinating Diseases Clinical Center grant from NIH. In the last eight years the department has been one of the most active centers in the United States and Europe in the conduct of trials of new forms of therapy for multiple sclerosis. Basic science and clinical studies in the demyelinating diseases are closely integrated.

Department members are also active in the study of cerebrovascular disease and its consequences. A Clinical Stroke Center funded by NIH has been established. Special emphasis has been placed on the epidemiology of stroke and the application of computer sciences to the diagnosis and treatment of stroke. There is a strong related departmental program to study language disorders. A very active program in diseases of peripheral nerve and muscle has been undertaken as well with special emphasis on the pathogenesis of Guillain-Barré syndrome and the treatment of myasthenia gravis. A highly developed program is focused on epilepsy with special interest in cases that fail medical therapy and must be considered for neurosurgical removal of a seizure focus. Active research at the molecular level is underway into neurologic degenerative diseases, especially Alzheimer's disease and Parkinsonism.

An expanded program in neurorehabilitation has been developed. Rehabilitation sites for neurologically damaged patients are at Montebello Rehabilitation Center and the James Lawrence Kernan Hospital in Baltimore. Departmental faculty provide most of the medical care to these patients. Specialized research programs are being developed in the rehabilitation of stroke, head injury, spinal cord injury and multiple sclerosis patients.

UNDERGRADUATE MEDICAL PROGRAM

First and Second Years

The department of neurology faculty teaches in the first-year Neurosciences and Functional Systems blocks, and in the second-year Pathophysiology and Therapeutics block. Selected faculty members also teach in other areas such as the Cell and Molecular Biology block in the first year and in blocks where epidemiology and immunology are taught, based upon their particular research interests and expertise.

Third Year

NEUR 530. Neurological Sciences III. All members of the third-year/fourth-year class have a four-week clerkship on the neurology-neurosurgery service at the University Hospital or the adjacent Baltimore Veterans Affairs Medical Center. A didactic series of lecture-demonstrations is given by the neurology and neurosurgery staff, and students attend the combined conferences in both disciplines. In addition, students attend rounds and may assist in the performance of some procedures. Under house staff and attending staff super-

vision, students are responsible for the care of patients with neurological disorders in both critical care unit and ward settings as well as in out-patient clinics. (Dr. Good)

ELECTIVES

NEUR 541. Clinical Electives. After completion of the third year, students are offered a variety of clinical experiences on the neurological service at University Hospital, Mercy Medical Center, Montebello Rehabilitation Center, St. Agnes Hospital, Baltimore Veterans Affairs Medical Center and the James Lawrence Kernan Hospital. The neurologic examination of the patient is emphasized, as well as the study and application of a wide variety of specialized neurologic diagnostic techniques. Each student will become proficient in taking a neurologic history, performing a neurologic exam, formulating a reasonable diagnostic impression or differential diagnosis, a plan of investigation and management for several of the more common neurologic problems. (Neurology Faculty)

NEUR 548. Neurological Research Electives. In all four undergraduate years, a limited number of students will have the opportunity to work with individual members of the department in the following areas: 1) cerebrovascular physiology; 2) neuromuscular research; 3) neurophysiology; 4) neurochemistry; 5) neurovirology and immunology; 6) computers and neurology; 7) epilepsy; 8) degenerative disorders; and 9) molecular-biology and the nervous system. (Drs. Koski, Panitch and Kittner)

STUDENT FELLOWSHIPS

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the 10-week fellowships taken during vacation periods.

GRADUATE STUDIES

There is a fully approved three-year residency training program in the specialty of neurology at the University of Maryland Medical System. This provides for clinical training as well as rotation through the associated basic science disciplines. In addition, fellowships are available for subspecialty neurology training, such as EEG and epilepsy, EMG and peripheral nerve disorders, stroke, neuroimmunology and neurorehabilitation. For further information contact the department chairman.

REHABILITATION MEDICINE

Division of Rehabilitation Medicine
Professor and Head
Kenneth P. Johnson, MD

The School of Medicine has developed a research and training center in the area of neurologic rehabilitation with the full knowledge that current life-saving expertise in the fields of stroke and trauma (head and spinal cord injury), combined with major technological advances in medical and surgical neurology, has saved and will continue to provide life to

the most severely disabled patients. There is no indication that the incidence of neurological disability will decrease; more likely it will increase. Specialized research programs are under way in the areas of head injury recovery, controlled reassessment of rehabilitation techniques and improved communication in aphasic patients using computer-assisted language.

The division of rehabilitation medicine is committed to the education of medical students, resident physicians, physical therapists and other allied health professionals. Expectations for the next decade indicate that the rehabilitation field in this country will require specialized training programs in addition to physiatry residency programs to supply qualified professionals in neurological rehabilitation. Accordingly, neurological rehabilitation probably will depend on other neurologists, internists, pediatricians, and neurological and orthopedic surgeons to fulfill the need. These physicians will need not only appropriate training in rehabilitation management, but exposure to the frontiers of fundamental research in neuroscience, particularly in the areas of neuroplasticity and recovery of function. To this end, a two-year fellowship program in neurologic rehabilitation has been established.

Obstetrics and Gynecology

Department of Obstetrics and Gynecology
Professor and Chair
M. Carlyle Crenshaw Jr., MD

The department provides a learning experience that encourages each student, regardless of ultimate career choice, to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual and reproductive systems. This experience enables each student to assume more effective responsibility for the general delivery of health care to the adolescent, adult and aging female and to the newborn.

The student is taught to recognize those patients who require special gynecologic consultation. Health-related social problems such as family planning and sexually transmitted diseases are discussed as well as other aspects of population control, sexual difficulties, sterilization and induced abortion.

The educational material is presented so as to familiarize students with all sources of knowledge relevant to these subject areas. Students may extend their knowledge and skills in a direction and depth appropriate to current and ultimate career goals. Students are also encouraged to take electives in basic, clinical and social research.

The service roles focus on the general areas of obstetrical and gynecologic care. Obstetrics deals with a high-risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, pre- and postoperative evaluation and family planning provide specific, specialized areas of instruction in addition to serving large numbers of patients. Cancer detection and therapy play a major part in the gynecologic program.

The department utilizes audiovisual aids to enhance the educational experience of both medical students and residents. The faculty also contributes to the postgraduate educational programs at the University of Maryland Medical System and throughout the state.

UNDERGRADUATE MEDICAL PROGRAM

The department of obstetrics and gynecology faculty teaches in the first-year Cell and Molecular Biology and Functional Systems blocks, and in the second-year Pathophysiology/Therapeutics block.

Third Year

OBST. 530. Clinical clerkship. Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks, they participate in the original diagnostic studies, pelvic exam, surgical procedures and postoperative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the outpatient department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact with faculty is achieved by means of a preceptorial system that assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Medical System, a similar instructional program is offered to a limited number of students by the obstetrics and gynecology departments at Mercy Medical Center, Harbor Hospital Center and Greater Baltimore Medical Center. (Staff)

Fourth Year

OBST. 541. Obstetrics and Gynecology Elective. The student may choose to spend a four-week elective in one of five subspecialty areas which include high-risk obstetrics, endocrinology, oncology, ambulatory OB/GYN, and human genetics. (Staff)

Affiliated Hospital Electives: Electives are available at Mercy Medical Center, Harbor Hospital Center and Sinai Hospital.

Several additional electives are listed with the office of student affairs.

Ophthalmology

Department of Ophthalmology
Professor and Chair
Eve Juliet Higginbotham, MD

UNDERGRADUATE MEDICAL PROGRAM

During the junior year, students spend a required week in ophthalmology during the combined radiology-ophthalmology rotation. Introductory lectures to the basic area of ophthalmology are given. Students experience firsthand examination of patients under the supervision of faculty, as well as didactic lectures. Case presentations of common ophthalmological conditions are reviewed with the students.

The department of ophthalmology offers clinical and/or research electives during the senior year. For the clinical clerkship, time is divided between the outpatient clinic and

operating room. Students are expected to gain experience with diagnostic instruments used in ophthalmological evaluations. Patients with a wide range of diseases are seen in the clinic where faculty with expertise in all ophthalmological subspecialty areas are present. Conferences and grand rounds are included in the program. Self-instructional aids are available.

RESEARCH INTERESTS

A variety of clinical trials funded by NIH and industry are on-going in the department. Infant vision, retinopathy of prematurity, ischemic optic neuropathy, glaucoma, and AIDS trials are currently in progress.

Basic research efforts of the department of ophthalmology currently concentrate on ocular changes from diabetes mellitus and ocular toxicity of radiant energy. Other projects include biochemical effects of aldose reductase and specific inhibitors on the lens, including oxygen toxicity to the lens, particularly as related to light-induced damage. Also, projects related to hormonal control of retinal pigment epithelium, as well as experimental ocular pathology, form a major part of our research program. Elective study opportunities exist for qualified students in this active ophthalmic biochemical research program. Postdoctoral fellowships in ophthalmic biochemistry are also available.

GRADUATE PROGRAM

A three-year residency program providing clinical training is offered at the University of Maryland Medical System, with rotations to the Baltimore and Wilmington, Delaware VA Medical Centers. Appointment is by application to the department of ophthalmology, University of Maryland Medical System.

Pathology

Department of Pathology
Professor and Chair
Benjamin F. Trump, MD

The primary goal of the department of pathology is the better understanding of human disease with emphasis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms. The student achieves this goal in three phases: 1) by acquiring the basic principles of pathology and applying those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; 2) by establishing a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans; and 3) by developing feelings of personal responsibility and ethics for the practice of medicine.

The department's philosophy is that the study of disease includes both structure and function and is carried out from the level of the patient to that of the molecule.

The student is exposed to anatomical and clinical hospital pathology services with additional training at Baltimore Veterans Affairs Medical Center and other local hospitals.

UNDERGRADUATE MEDICAL PROGRAM

The department of pathology faculty teach primarily in the second year in the Immunology, Host Defenses, Infectious Disease, Epidemiology and Preventive Medicine block, and in the Pathophysiology and Therapeutics block. Faculty also participate in other freshman-year blocks teaching. Pathophysiology and the study of the mechanisms of disease as well as morphology are stressed.

ELECTIVES

Supplementing the core program are more than 12 elective course offerings for medical students. These opportunities span a wide range of departmental activities from system-oriented courses such as renal, pulmonary, neurological or cardiovascular pathology to process-oriented instruction such as environmental pathology, carcinogenesis and research seminars. The latter are conducted with the aid of a number of guest speakers who are leading authorities in their fields. Research and clinical preceptorships are encouraged.

Other courses are of more general interest and include seminars in clinical pathology or clinical clerkships in Baltimore area hospitals. Medical students also have access to courses in experimental pathology such as histochemistry, tissue culture or pathological biochemistry.

Advanced Accelerated Program in Pathology (AAPP). The AAPP admitted the first group of students in the fall of 1975 in an effort to permit early specialization and target-oriented education. The track in pathology begins in the freshman year. It makes use of all the resources of the department of pathology, and includes three types of experience: 1) exposure to the practice of pathology; 2) study of one selected field of emphasis; and 3) exposure to research. Up to five students may be admitted during their first year. They are required to fulfill all the requirements of the track; however, they are not committed to seek a career in the field of pathology. The training in the track program should provide the student with the knowledge of a one-year residency program. Time spent in training within the track program can count toward elective or residency time. (Dr. Mergner)

RESEARCH INTERESTS

Research efforts in the department of pathology focus upon the pathobiologic mechanisms of human disease at the cellular, subcellular and molecular levels. Current projects involve a broad spectrum of diseases which include cancer, immunologic disease, heart disease, shock, infectious disease and aging.

Cancer research efforts focus upon accurately defining the sequence of events within cells following their exposure to confirmed carcinogens, mutagens and environmental toxins. This involves the development of varied strategies for assaying human risk from environmental pollutants and the development of animal and fish models for human disease with environmental etiologies.

Research efforts in heart disease are directed toward providing a definitive description of the mechanisms that lead to cell death subsequent to the depletion or complete loss of oxygen supply. Identification of parameters whose manipulation might result in impeding or halting cell death and development of improved methods of therapy for preventing the damaging effects of shock are integral components of this research.

Faculty research projects focus on the delineation of the mechanism by which microbes invade and destroy human cells; the identification of microbial antigens with the capacity to elicit an autoimmune disease in the host; the study of mechanisms of immunologic injury as related to complement-mediated lysis; immune complex diseases and autoimmunity; and the analysis of the events leading to cell death as a consequence of the normal process of aging.

GRADUATE PROGRAM

The department of pathology offers programs of study leading to the PhD degree or the combined MD/PhD degree in medical pathology, the PhD degree in forensic toxicology and the MS degree in pathology. Areas of concentration offered in the MS degree program are medical pathology (including anatomic pathology and clinical chemistry) and forensic toxicology. The master's and doctoral programs train individuals for research and service in pathology and related fields. Research programs use modern techniques, including x-ray microanalysis, quantitative microscopy, flow cytometry with cell-sorting capability, spectrofluorometry and calcium imaging.

The program leading to the PhD in medical pathology includes comprehensive training in experimental pathology with emphasis on the pathogenesis of cell injury and carcinogenesis; environmental pathology; and immunology. Students working toward combined MD/PhD degrees in medical pathology are enrolled simultaneously in the School of Medicine and the Graduate School in specially tailored programs designed to meet their specific goals and research interests as physician-scientists. The PhD program in forensic toxicology (legal medicine) includes comprehensive training in toxicology, gross anatomic pathology related to toxicology, instrumental analysis, medicinal chemistry and pharmacology.

The program leading to an MS degree in pathology is highly individualized. Concentrations in medical pathology and forensic toxicology are designed for students seeking training in laboratory work and research methods. Training in anatomic pathology, one of three such programs in the United States, prepares students for certification as a pathologist's assistant. Training in clinical chemistry prepares individuals for certification in clinical chemistry and for advanced work in this discipline.

For details of admission requirements and course offerings, see the pathology section in the Graduate School catalog.

Pediatrics

Department of Pediatrics
Professor and Chair
Michael A. Berman, MD

The efforts of the department of pediatrics are directed toward providing the best possible services for children while deriving an educational program to meet the needs of individual students, physicians and other health care workers. By preparing physicians and other health care professionals to provide high quality, comprehensive developmentally appropriate care for infants, children and adolescents, the department can best satisfy the vital

need for child health services in the community. Included among the providers of health care are not only pediatric generalists, but also basic scientists, health educators, subspecialists, medical center academicians, community health planners and students of all of these disciplines. The department of pediatrics seeks to play a dynamic role in the development of these health professionals throughout all levels of their education—undergraduate, graduate and postgraduate.

A clinical clerkship experience is offered with inpatients, full-term infants and ambulatory patients. A wide variety of electives is also available providing opportunities to explore aspects of preclinical and clinical pediatric research, additional individualized inpatient and ambulatory clinical clerkships, specific preceptorships, subspecialty experiences and community pediatrics.

RESEARCH INTERESTS

The research efforts of the department of pediatrics are directed toward understanding a wide range of pediatric problems. These studies employ sophisticated research strategies and the newest technical equipment to obtain answers to problems in the perinatal, neonatal, childhood and adolescent periods. Several major categories of research include an investigation into the causes and treatments of mental retardation, a multidisciplinary examination of the various aspects of sudden infant death syndrome, the examination of immunological and microbiological factors associated with problems of early development, a series of studies related to neonatal metabolism, studies on perinatal transmission of HIV and pediatric AIDS, and a well-defined group of psychological studies. These and other research efforts have been successfully integrated into the service and teaching program within the department.

UNDERGRADUATE MEDICAL PROGRAM

First Year

Pediatric faculty participate in the Human Behavior block, discussing aspects of growth and development, and in Introduction to Clinical Practice (ICP), with presentations on varying aspects of childhood and pediatric care.

Second Year

PEDI 521. Pediatric Physical Diagnosis. Individualized experience is offered in taking a pediatric medical history and in learning the techniques used in the examination of infants, children and adolescents. (Dr. Lentz) *This will be part of the Introduction to Clinical Practice longitudinal experience in the second year of the "new curriculum."*

Third Year

PEDI 530. Clerkship. Students are assigned as clinical clerks for a period of six weeks at the University Hospital and Mercy Medical Center. Each of these facilities provides clinical experience in inpatient pediatrics (including nurseries) as well as in ambulatory services for children and adolescents. Students are also offered experience in the pediatric subspecialty clinics and are scheduled to work with pediatricians in private practice in the community.

Regularly scheduled conferences include pediatric subspecialty areas and are supplemented with chart conferences, case discussions, evaluations of neonatal mortality and journal reviews. Small group tutorials cover concepts of pathophysiology, diagnosis and

therapeutic management of common pediatric problems. The total impact of the illness on the child and family is emphasized. The student is encouraged to become familiar with all aspects of pediatric practice. (Dr. Nair)

Fourth Year

PEDI 540. Pediatric Electives. The variety of elective experiences include student internships in full-term and intensive care nursery settings, on wards and within ambulatory care centers. Laboratory research studies may be pursued as well as experiences in specific pediatric subspecialties. Please refer to the medical school electives catalog. (Dr. Gladstein)

PEDI 548. There is a possibility of spending the required eight-week senior student internship on the pediatric wards of the University of Maryland Medical System.

PEDI 541. Pediatric ambulatory sites are available for the required eight-week senior ambulatory rotations.

Minimester Electives

The department offers a wide range of experiences including some in preclinical and clinical research. For a complete listing, please refer to the medical school minimester catalog.

Pharmacology

Department of Pharmacology and Experimental Therapeutics
Professor and Chair
Edson X. Albuquerque, MD, PhD

The department's teaching objectives are to provide medical and graduate students with those principles underlying the distribution, metabolism, mechanism of action and toxicity of therapeutic agents or substances. An overriding goal of the medical school teaching program is to convey the fundamental principles of basic and clinical pharmacology and therapeutics through an interdisciplinary teaching effort which brings together faculty from this department and those from other basic science and clinical departments. The faculty of the department of pharmacology and experimental therapeutics, therefore, provide substantial leadership and participation in the Pathophysiology and Therapeutics block given during the second year of the medical curriculum. When needed, the department also provides its teaching expertise to other courses throughout the four years of the medical curriculum.

GRADUATE PROGRAM

At the graduate level, there are three defined areas of study (tracks): oncopharmacology, neuropharmacology and pharmacological biotechnology. All three tracks incorporate: 1) training in modern techniques of pharmacology (molecular biology, receptor biochemistry, cell biology, tissue culture, radioimmunoassay, electron microscopy, traditional electrophysiology, patch clamping, etc.); 2) research directed toward study of new drugs and

increasing effectiveness of existing drugs used in treatment of human diseases; and 3) research to better understand actions of drugs and toxins on various organ systems. The department welcomes medical students into graduate research through the MD/PhD Program in the School of Medicine.

The Graduate School catalog describes the graduate courses and electives which are also available to medical students and includes introductory courses for each of the three tracks (neuropharmacology, oncopharmacology, pharmacological biotechnology). Some of the available courses are: biochemical pharmacology, developmental neurobiology, endocrine pharmacology, fundamentals of membrane transport, fundamentals of pharmacology, introduction to membranes, ion channels, molecular neuropharmacology, molecular oncopharmacology, pharmacological biotechnology, and synaptic physiology and pharmacology.

Faculty also offer elective summer courses tailored to the didactic and research needs of individual students. Students should consult the course master or graduate program director for further details.

Physiology

Department of Physiology
Professor and Chair
Mordecai P. Blaustein, MD

The department of physiology provides lecture, laboratory and seminar courses in the principles of human physiology for medical students. Also offered are advanced courses in specialized areas of physiology for graduate students, fellows and interested medical students (see Graduate School catalog).

RESEARCH INTERESTS

The faculty of the department of physiology is dedicated to elucidating fundamental new information about the mechanisms that underlie a variety of physiological processes. Many of the department's research programs focus on four general areas: cell and membrane physiology, neurobiology, endocrinology and cardiovascular/renal physiology. The research programs encompass a number of topics with direct clinical relevance, including projects related to aging, cardiac arrhythmias, reproduction and contraception, diabetes, epilepsy and hypertension. Medical students are encouraged to participate in research activities during summer and other elective periods. Opportunities for combined MD/PhD training are also available.

UNDERGRADUATE MEDICAL PROGRAM

First and Second Years

The department of physiology is a major participant in the freshman curriculum with faculty teaching in Structure and Development (Block III), Neurosciences (Block V) and Functional Systems (Block VI) in the first year, and in Pathophysiology and Therapeutics (Block VIII) in the second year.

Other Opportunities. Various elective courses, advanced seminars and research in special areas of physiology are open to interested students during the independent study or senior elective period or other free time. A combined MD/PhD program requiring additional course work and original research is offered for highly qualified medical students. (See Graduate School catalog for additional advanced courses.)

Fourth Year

MPHY 542. Seminars in Physiology Elective. Advanced seminars in selected fields of physiology (e.g. cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

MPHY 548. Research Elective in Physiology in Selected Fields. Students may elect to carry out independent research programs in faculty laboratories.

Psychiatry

Department of Psychiatry
Professor and Chair
John A. Talbott, MD

The goal of undergraduate psychiatric education is to assist students to acquire an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance through an exposure to a progressive sequence of intellectual stimulations, clinical experiences and appropriate professional socialization and within the interdisciplinary framework of the new curriculum. More specifically, the curriculum aims to assist the student in: 1) acquiring a foundation of knowledge regarding the biological, psychological, sociological and humanistic aspects of the practice of medicine; 2) mastering basic interpersonal and psychiatric skills relevant to the management of patients with medical and/or emotional illness; and 3) emulating attitudes and values that enhance the professional roles and practices of a physician.

UNDERGRADUATE MEDICAL PROGRAM

First Year

Psychiatry faculty teach in Blocks II, V and VI of the freshman curriculum.

Second Year

Psychopathology. This course is taught as part of the Neuroscience module of the Pathophysiology and Therapeutics block in the second year and through additional interdisciplinary teaching in other relevant systems (e.g., cardiovascular, endocrine, etc.) within the new curriculum. The core course is designed to provide students with the basic concepts of clinical psychiatry, including psychopathology and psychiatric treatment of mental disorders. The course format is based on brief lectures, audiovisual demonstrations (videotapes, films) small group discussions, problem-solving sessions and assigned work for self-study.

Psychiatric Interviewing/History Taking. This course is part of the second-year Introduction to Clinical Practice (ICP) course, which is devoted to specialty physical diagnosis and examination. The psychiatric course is devoted to psychiatric interviewing, history taking and mental status examination. The course uses a small group format in which groups of five students meet with an instructor for six two-hour sessions. A general introductory lecture is followed by the small group sessions where each student performs a psychiatric interview, observes fellow students performing interviews, reviews interviewing techniques and psychopathologic concepts with the small group leader.

Third Year

Junior Psychiatry Clerkship (6 weeks). The junior clerkship in psychiatry is the main clinical psychiatric experience for University of Maryland medical school students. It is generally taken in the third year and is a six-week intensive experience combining inpatient, outpatient and consultation experiences in which the student is exposed to an array of psychopathologies in a variety of treatment settings. Pharmacologic, psychotherapeutic, biological and psychosocial modalities are utilized. The core experiences are broken down as follows: 60 percent of time in inpatient settings, 20 percent of time in ambulatory settings and 20 percent of time in didactic seminars and clinical case conferences.

Students work under the preceptorship of a psychiatry attending and resident. Students are assigned approximately three patients from the inpatient service and serve as their primary therapist. This responsibility and involvement with patients provides an ideal setting in which the student may apply the biopsychosocial concepts learned in the first-year behavioral social sciences course with the concepts of psychopathology and clinical skills of psychiatric interviewing, history taking and mental status examination acquired in the second-year courses. The student assumes an integral role on the multidisciplinary team and ward milieu.

Students are also given clinical exposure to patients with psychiatric or behavioral problems in a variety of other settings. These are generally comprised of four-hour per week assignments with psychiatric faculty in outpatient consultation settings. Current assignments include a university consultation-liaison service, an emergency walk-in clinic, addiction consultation service, a methadone clinic, a community mental health clinic, a university diagnostic and evaluation clinic, a psychiatric liaison to an HIV clinic, and several addiction outpatient settings.

The scope of didactic courses includes six six-hour seminars in: psychopathology, psychotherapy modalities, consultation/liaison, child psychiatry, substance abuse and psychopharmacology, as well as a clinical case conference focusing on interviewing, diagnostic and treatment skills.

Students are also assigned night-call with a psychiatric resident as part of their rotation. Evaluation is based upon individual preceptor evaluations (50 percent), a multiple-choice examination (30 percent) and an oral examination (20 percent) given by psychiatric faculty.

The clerkship involves student assignments to the following training sites: Institute of Psychiatry and Human Behavior (IPHB-UMMS), Walter P. Carter Center (WPCC-UMAB), Spring Grove Hospital and the Baltimore Veterans Affairs Medical Center.

ELECTIVES

The department of psychiatry offers elective courses in all four years of the medical curriculum. Elective courses offered in the senior year include: inpatient psychiatry, community psychiatry, emergency psychiatry, forensic psychiatry, child psychiatry, geriatric psychiatry, substance abuse and consultation/liaison psychiatry.

Combined Accelerated Program in Psychiatry—CAPP Program. This elective track has become nationally visible for its success in engaging students in psychiatry through an advanced four-year curriculum that begins in the freshman year. The program has continued to admit 12 freshman students each year. From the first month of the freshman year, the track provides an unfolding progression of combined didactic and clinical experiences in the behavioral sciences and in clinical psychiatry.

Radiation Oncology

Department of Radiation Oncology
Professor and Chair
Omar M. Salazar, MD

The department of radiation oncology is divided into seven divisions: 1) education; 2) clinical radiation; 3) radiation research; 4) clinical physics; 5) nursing; 6) administration; and 7) outreach, representing the various areas of interest within this specialty. All are closely interrelated to achieve improved management of the cancer patient.

The medical student is offered a unique and broad exposure to oncology with emphasis on principles of radiation oncology, biology and physics. This is done through lectures, actual case presentations, demonstrations and participation in new patient and follow-up clinics. General information concerning biology, pathology and behavior of cancer is discussed. The indications and applications of the different types of radiation are presented. The use of combined modalities therapy in the management of the cancer patient is emphasized.

RESEARCH INTERESTS

Departmental research efforts are focused upon many areas of oncology. The use of radiation as a systemic treatment agent, brachytherapy, hyperthermia, neuro-oncology, stereotaxis, conformal therapy, 3-D treatment planning, CT simulation, microcirculation of tumors, tumor microenvironment, molecular oncobiology and fractionation schemes represent several departmental research interests.

UNDERGRADUATE MEDICAL PROGRAM

Third Year

During a three-week rotation through radiology, radiation oncology and nuclear medicine, students will spend three days in radiation oncology. A series of lectures and demonstra-

tions familiarize students with the principles of the specialty. Students also participate in conferences, clinics and direct patient management.

Fourth Year
Elective in Radiation Therapy. Students interested in oncology are offered an opportunity to participate as members of the radiation oncology team. They become familiar with the evaluation, management and follow-up of cancer patients. Included are treatment planning, dosimetry, the use of interstitial and intracavitary sources of radionuclides, remote afterloader and gamma knife.

GRADUATE PROGRAM

An approved four-year residency program in radiation oncology is offered at the University of Maryland Medical System. Teaching is carried out through didactic lectures, clinics and numerous teaching conferences, with emphasis on patient care, under the supervision of a full-time staff. Elective time is spent in related oncological specialties to promote the multidisciplinary concept of management of patients with cancer. The department enjoys state-of-the-art equipment and has several sites in their operation, both on and off campus, which include: the University Physicians Professional Building and a new main facility in the Gudelsky Tower expansion to the University of Maryland Medical System.

Surgery

Department of Surgery
Professor and Chair
Anthony L. Imbembo, MD

The department of surgery is organized into 10 divisions: general surgery, emergency medicine, neurological surgery, orthopedic surgery, otolaryngology-head and neck surgery, plastic and reconstructive surgery, surgical critical care, surgical services for infants and children, thoracic and cardiovascular surgery and urology. Many faculty participate in the teaching of anatomy, pathology and physiology, and almost all participate in formal courses offered during the clinical years. During the junior year, all students must complete the 12-week clinical clerkship in surgery. Six weeks are spent in general surgery with the remaining time divided among specialty rotations of the students' choosing. The general surgical clinical rotations are based at the University of Maryland Medical System, Mercy Medical Center and the Baltimore Veterans Affairs Medical Center.

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions as subinternships and electives during the fourth year.

The surgical clerkship exposes the student to disease entities that can or should be treated by operative intervention and to the physiologic and metabolic consequences of such intervention. Students learn to recognize conditions that will require surgical consultation. They gain an appreciation of wound care as well as familiarity with basic emergency procedures. This course of study enables the future family practitioner, internist, pediatri-

cian or psychiatrist to discuss probable treatment and prognosis of various surgical diseases with their patients. Further, students are given the opportunity to explore various surgical disciplines and to participate fully in the daily activities of the surgical teams.

Graduates of approved medical schools may be considered for residencies in general surgery, emergency medicine, neurological surgery, orthopedic surgery, otolaryngology-head and neck surgery, pediatric surgery, plastic and reconstructive surgery, surgical critical care, thoracic and cardiovascular surgery and urology.

GENERAL SURGERY

Division of General Surgery
Professor and Head
Anthony L. Imbembo, MD

UNDERGRADUATE MEDICAL PROGRAM

First Year
Faculty members of the department of surgery participate in the Structure and Development, Neurosciences, and Functional Systems blocks of the first year of the undergraduate curriculum.

Third Year
The teaching of general surgery is conducted on the inpatient services of the University of Maryland Medical System, Baltimore Veterans Affairs Medical Center and Mercy Medical Center. Students are divided into groups for continuous assignment to individual patient services. Selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. The differential diagnosis, final diagnosis and recommendations for therapy must be developed. Operating room participation, supervised direct patient care, and attendance at outpatient clinics are required as part of the emphasis on continuity of patient responsibility. The program is designed to provide the student with a broad overview of the fundamentals of the discipline in the clinical environment by emphasizing contact with a wide variety of adult and pediatric patients. Clinical problems encountered usually include surgical infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects.

The student is responsible for a core curriculum of surgical knowledge. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management. Didactic instruction is provided through lectures, small discussion groups, clinical conferences and grand rounds. Final evaluation is based upon clinical performance and a comprehensive examination.

Fourth Year
The department of surgery offers four week subinternships in general surgery at University Hospital and the Veterans Affairs and Mercy Medical Centers for those students interested in a career in surgery or seeking to expand their knowledge of surgical science. Various clinical electives in general surgery are offered at the University of Maryland Medical System,

Mercy Medical Center and York Hospital. Electives include general surgery, trauma surgery, vascular surgery, transplantation surgery and surgical intensive care.

Senior students are expected to be an integral part of the surgical team. Under supervision, they assume responsibility for initial patient evaluation in the clinics and emergency room, participate in pre- and postoperative care, attend the operating room, participate in clinical conferences and take night call.

GRADUATE PROGRAMS

A fully accredited residency in general surgery is based at the University of Maryland Medical System, incorporating important clinical experience at Mercy Medical Center and the Baltimore Veterans Affairs Medical Center. The program offers five years of clinical experience with graded responsibility and one year of basic investigation. Additionally, a fellowship in surgical endoscopy and laparoscopic surgery is available.

EMERGENCY MEDICINE

Division of Emergency Medicine
Associate Professor and Head
Robert A. Barish, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year

During the third year, students are able to evaluate patients in the emergency room setting as part of the various surgical teams to which they are assigned during the basic surgical clerkship. They begin to establish priorities for expedient formulation of differential diagnoses and prompt intervention.

Fourth Year

The division of emergency medicine offers a one-month elective during the senior year. Under direct supervision, the student functions as an intern, evaluating the patient by means of a complete history and physical examination and appropriate laboratory studies. Faculty offer monthly anatomic laboratories during which students learn minor procedures and suturing techniques. Didactic sessions include lectures and teaching rounds. Each student spends one shift riding an ambulance with Baltimore City paramedics.

GRADUATE STUDIES

The University of Maryland offers an accredited three-year residency program in emergency medicine. Residents rotate through Mercy Hospital, the R Adams Cowley Shock Trauma Center, as well as the University Hospital which is the principal teaching facility for the program.

NEUROSURGERY

Division of Neurological Surgery
Professor and Head
Howard M. Eisenberg, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
During the third year, students may choose to spend three weeks on the neurosurgical service as part of the basic surgical clerkship. Opportunities are provided for observing neurosurgical procedures and participating in all service activities.

Fourth Year
A fourth-year elective is available in general neurosurgery. Student responsibilities are significantly enhanced in the operating room and in provision of patient care. Special preceptorships in pediatric neurosurgery, neuro-oncology and neurotraumatology are also offered.

GRADUATE STUDIES

A training program in neurological surgery is available to graduates of accredited medical schools who have completed one year of general surgical residency. The five-year program is based at the University of Maryland Medical System.

ORTHOPEDIC SURGERY

Division of Orthopedic Surgery
Professor and Head
John E. Kenzora, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
As part of the basic surgical clerkship, general principles of orthopedic surgery are taught and students are introduced to fracture recognition and management, orthopedic reconstructive surgery and to common outpatient conditions affecting the musculoskeletal system. Students electing a clinical rotation during the clerkship participate in patient diagnosis and treatment, as well as operative procedures. They receive practical instruction in the use and application of various splints and casting techniques. Student conferences and didactic sessions are conducted to supplement the division's intensive academic program.

Fourth Year
Senior students may participate in one-month electives during which they obtain internship-level clinical and surgical experience. The elective is offered on each of the Univer-

sity Hospital services and at the Shock Trauma Center. Students participate in weekly orthopedic conferences and seminars. Each of the senior electives is under the direction of a full-time member of the orthopedic faculty.

GRADUATE STUDIES

The division of orthopedic surgery offers an accredited four-year residency program. Clinical and surgical experiences are obtained on the foot, hand, tumor and chronic spine services at the University Hospital. Experience with major trauma and spinal injury is obtained at the Shock Trauma Center. The pediatric orthopedic service is based at the James Lawrence Kernan Hospital. An intensive academic program in basic science and clinical orthopedic surgery has been developed for resident education. Each resident has a mandatory research assignment.

OTOLARYNGOLOGY

Division of Otolaryngology-Head and Neck Surgery
Professor and Head
Douglas E. Mattox, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
The division provides an introduction to the diseases of the head and neck. Exposure to patients with communication disabilities and impairments in hearing, speech or language also occurs. Through lecture and direct tutorial instruction, students obtain clinical experience ultimately relevant to a wide variety of fields, including family practice, pediatrics, general surgery, neurosurgery and psychiatry, as well as otolaryngology.

Third-year students who elect otolaryngology as part of the surgical clerkship are introduced to the care of patients with diseases of the ears, nose and throat. Introductory speech pathology, auditory physiology and basic audiologic techniques are presented to each group. Fundamental elements of otolaryngologic diagnosis and therapy are stressed.

Fourth Year
A one-month elective in clinical otolaryngology-head and neck surgery is offered at the University Hospital. The student functions as an integral member of the patient care team.

GRADUATE STUDIES

A fully accredited four-year residency program in otolaryngology-head and neck surgery is offered at the University Hospital. Residents must complete one year of general surgical training prior to entering this program.

PLASTIC AND RECONSTRUCTIVE SURGERY

Division of Plastic and Reconstructive Surgery
Professor and Head
Nelson H. Goldberg, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
As part of the basic surgery clerkship, students may elect a rotation on the plastic surgery service at the University Hospital. Emphasis is placed on learning the principles of wound healing, wound care and reconstruction of post-traumatic or ablative defects. Students are also introduced to the treatment of congenital abnormalities and cosmetic problems in both the inpatient and ambulatory environments. Daily teaching rounds provide students with an opportunity to participate in case presentations. Students accompany patients to the operating room and attend all teaching conferences.

Fourth Year
A one-month elective is available to senior students interested in plastic and reconstructive surgery. Under supervision, the student functions as a subintern taking responsibility for pre-and postoperative care of selected patients.

GRADUATE STUDIES

The University of Maryland at Baltimore and Johns Hopkins University offer a combined three-year residency program in plastic and reconstructive surgery. Each year three residents enter this fully accredited residency training program and, upon completion, are eligible for examination by the American Board of Plastic and Reconstructive Surgery. Training takes place at the University Hospital, the Johns Hopkins Hospital, the R Adams Cowley Shock Trauma Center, Francis Scott Key Medical Center, Union Memorial Hospital, Children's Hospital and the Veterans Affairs Medical Center.

SURGICAL CRITICAL CARE

Division of Surgical Critical Care
Professor and Head
Donald S. Gann, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
All students follow their assigned patients during critical care unit stays as part of each rotation during the basic surgical clerkship. In addition, a three-week rotation in the surgical intensive care unit may be selected as part of the clerkship experience.

Fourth Year
During the fourth year, a one-month elective is available in the surgical intensive care unit. The student receives intensive exposure to all aspects of surgical critical care. Didactic conferences and teaching rounds are an important part of the experience. This elective is excellent preparation for residency training.

GRADUATE STUDIES

Fellowship training in surgical critical care is available in a fully accredited one year program. Clinical experience is obtained at the University Hospital and the Shock Trauma Center. Candidates must have completed general surgical training to be eligible for this program. Research fellowships are available through a Trauma Training Grant awarded by the National Institutes of Health.

SURGICAL SERVICES FOR INFANTS AND CHILDREN

Division of Surgical Services for Infants and Children
Professor and Head
J. Laurance Hill, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
The division of surgical services for infants and children aims to provide students with a perspective on the unique problems encountered when caring for patients with pediatric surgical illness, to teach management of these often complex problems and to introduce the delicate surgical techniques developed especially for young patients.

As part of the basic surgical clerkship, students may elect to spend three weeks with the pediatric surgical team. Each is assigned patients to evaluate preoperatively, to accompany to the operating room and to help manage during the postoperative period. Emphasis is placed on differential diagnosis, embryology, anatomy and developmental pathophysiology. Patients range in age from prematurity to adolescence. Exposure to the nursery, pediatric emergency room and intensive care units is an integral part of the experience. Didactic instruction is provided in the operating room, during teaching rounds, by case presentations and in conferences.

Fourth Year
During the senior year, students may choose a one-month elective on the pediatric surgery service functioning, under supervision, as a subintern.

GRADUATE STUDIES

The University of Maryland at Baltimore-Johns Hopkins University integrated training program in pediatric surgery offers an accredited two-year residency. The program requires board eligibility in general surgery with candidates applying during the fourth year of general surgery training. This residency participates in a match program with 25 centers in the United States and Canada.

THORACIC AND CARDIOVASCULAR SURGERY

Division of Thoracic and Cardiovascular Surgery
Professor and Head
Joseph S. McLaughlin, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
During the basic surgical clerkship, students can elect a specialty rotation on the cardiothoracic service. They participate, along with the resident staff, in all service activities, patient care responsibilities and teaching conferences.

Fourth Year
The goal of the one-month senior elective in cardiothoracic surgery is to present, in a clinical setting, the basic pathophysiologic principles of thoracic and cardiovascular surgery. The student becomes an integral member of the patient care team and, under supervision, participates in the capacity of an intern. Emphasis is placed on diagnosis and management of the patient with surgical heart disease.

GRADUATE STUDIES

The three-year residency program is accredited by the Residency Review Committee of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination on admission to the program. Residents are given an opportunity to assist and then perform all types of cardiothoracic operative procedures, with a particular emphasis on adult cardiac surgery. Excellent experience in general thoracic surgery is also provided.

UROLOGY

Division of Urology
Professor and Head
Stephen C. Jacobs, MD

UNDERGRADUATE MEDICAL PROGRAM

Third Year
The curriculum is designed to introduce urologic principles as they relate to preservation of health through maximum renal function, normal urine storage and transport, an acceptable voiding pattern, treatment and prevention of urinary infection, identification and management of neoplasms of the urinary tract and male reproductive system and management of urolithiasis. Instruction is also given on disorders of the male reproductive tract including infertility and disturbance in sexual function.

During the basic surgical clerkship, students can elect a specialty rotation on the urologic service at either the University Hospital or the Harbor Hospital Center. Each stu-

dent is assigned patients to evaluate, follow and present to members of the faculty. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the outpatient clinic.

Fourth Year

Senior students may participate in a one-month elective in urology at the University of Maryland Medical System or at Sinai Hospital of Baltimore.

GRADUATE STUDIES

The residency program consists of five years of urologic training following two prerequisite years of general surgery. In addition to four years of clinical training, one year is devoted to basic investigation in the laboratories of the division.

Programs

Program of Oncology

Director
Ernest C. Borden, MD

The University of Maryland Cancer Center was established in 1982. Its history dates back to 1965 when the National Cancer Institute's Division of Cancer Treatment created the Baltimore Cancer Research Center at the Baltimore U.S. Public Health Service Hospital. In 1974 the center moved to the University of Maryland at Baltimore (UMAB) and remained an intramural NCI program under contractual arrangement between the NCI and UMAB until 1982, when it became the University of Maryland Cancer Center. The clinical effort of the center was established as a separate clinical entity within the University of Maryland Medical System. Within the School of Medicine and the other UMAB schools the Cancer Center serves as the umbrella for all cancer-related activities on campus. The Cancer Center faculty have academic appointments in various clinical and basic science departments of the School of Medicine and other UMAB schools such as Pharmacy, Dentistry and Social Work.

Activities of the Cancer Center include basic and clinical cancer research, student and house officer teaching and a strong focus on aggressive treatment with intense patient care in the 56-bed inpatient and outpatient services of the Cancer Center. In addition to full-time attending services on medical oncology and hematology, Cancer Center faculty members provide a uniquely supportive program involving a multimodality approach to the treatment of patients with primary/secondary malignancy involving the central nervous system and lungs as well as patients on the gynecological and surgical services of oncology, genitourinary, otolaryngology and neuro-oncology.

The University of Maryland Cancer Center is a strong participant in new drug development and performs research on new anticancer drugs. Virtually every important drug in use in oncology today has been tested in this program, and the center has contracts in both the public and private sectors with a commitment to clinical and laboratory research. Pilot studies and Phases I, II and III Trials are performed, which range from testing efficacy and potential applicability of a given treatment program and establishing dose and toxicity limitations of new drugs, to comparing treatment programs for superiority of treatment, toxicity and outcome. These studies tend to be definitive treatment programs that have major impact on the practice of oncology nationwide. The faculty has a strong commitment to interinstitutional cooperative scientific trials and cancer research.

The Cancer Center's Laboratory of Immunology Research generated safety and efficacy data that played a key part in obtaining FDA approval for clinical use of genetically engineered recombinant alpha interferon. Since 1982 the Cancer Center has played an important role in studies of acquired immunodeficiency syndromes (AIDS) and related disorders.

Students and residents participate in weekly grand rounds and conferences, and students are encouraged to become involved in research projects with Cancer Center faculty. The Cancer Center sponsors an ongoing cancer research seminar series which attracts nationally known speakers.

Medical and Research Technology

Department of Medical and Research Technology
Professor and Chair
Denise M. Harmening, PhD

The department of medical and research technology currently offers majors in clinical laboratory sciences (medical technology) and biomedical science/biotechnology. These programs combine the advantages of a major research university with the benefits of small classes and a high faculty-to-student ratio. As a component of a large academic health center, the department of medical and research technology affords students unusual opportunities to participate in a stimulating educational environment while gaining practical experience in clinical laboratory science and biotechnology.

Clinical laboratory sciences provide information crucial to the diagnosis and prevention of disease, the management of patient therapy and maintenance of health. Clinical laboratory scientists are involved in performing laboratory procedures ranging from identification of microorganisms, to providing blood for emergency transfusion.

Biomedical science focuses upon the discovery, development and production of chemicals, diagnostic products and biopharmaceuticals. The biotechnologist uses skills in molecular and cellular biology, immunology, protein chemistry and microbial fermentation to produce reagents and products used in industry, medicine and in basic and applied research.

Students complete a two-year preprofessional curriculum at a regionally accredited community college or university of their choice. Those attending two-year institutions may transfer directly to the department of medical and research technology at the University of Maryland at Baltimore. Most students complete the professional curriculum in two years; however, a three-year, part-time option is available for non-traditional students. Additionally, a categorical certification track is offered for students already possessing a bachelor's degree in biology, microbiology, chemistry or other scientific discipline. Upon completion of the program, students receive a bachelor of science degree in medical and research technology and are eligible for certification from national agencies such as ASCP or NCA.

The clinical laboratory sciences concentration of study fulfills requirements set forth by the National Accrediting Agency for Clinical Laboratory Sciences, and is accredited by the Committee on Allied Health Education and Accreditation on behalf of the American Medical Association.

CLINICAL AFFILIATIONS

During the final component of the program, students complete clinical practice courses in five specialty areas. Placement in clinical sites is guaranteed.

The department is affiliated with 24 clinical facilities in the Baltimore-Washington area. Clinical facilities include university-based and community hospitals and independent laboratories.

The biomedical science concentration requires students to complete three months of training at two externship sites. The first of these is undertaken in the research laboratories of the University of Maryland at Baltimore, the Maryland Biotechnology Institute or other University of Maryland System campus with research programs in biotechnology. The second practica must be undertaken in either a large or small-scale industrial setting.

The number and variety of clinical and research sites are assets that set the University of Maryland School of Medicine's clinical laboratory sciences and biomedical sciences majors apart from others, and allow students to experience several different work settings.

For additional information contact:

Academic Coordinator
Department of Medical and Research Technology
University of Maryland School of Medicine
Allied Health Building, Room 440-B
100 Penn Street
Baltimore, Maryland 21201-1587
(410) 706-7664

Physical Therapy

Department of Physical Therapy
Associate Professor and Chair
Clarence W. Hardiman, PhD

The School of Medicine offers an entry-level Master of Physical Therapy Program at the University of Maryland at Baltimore. Students complete three years of preprofessional course work prior to beginning their studies on this campus. Successful completion of the three-year professional program in physical therapy results in a Master of Physical Therapy Degree.

Applicants must have a grade point average of not less than 2.7 and 90 prerequisite credits of which no grade of less than "C" is acceptable (15 of the 90 prerequisite credits must be at a 300 level or greater). A minimum of 80 hours of work or volunteer experience in a physical therapy setting and a current CPR certification are required.

Clinical experiences are provided in general/acute, rehabilitation, and a specialty such as orthopedics, sports medicine, pediatrics, geriatrics, industrial medicine and community health settings. These practicum experiences are local and in centers located over a wide geographic area throughout the United States.

For additional information contact:

Department of Physical Therapy
School of Medicine, University of Maryland at Baltimore
Allied Health Building
100 Penn Street
Baltimore, Maryland 21201-1587
(410) 706-7720

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Associate Professor and Acting Chair
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Allman, Robert A., MD, School Professor
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Price, Thomas R., MD, Professor (Neurology)
Provenzano, George, PhD, Research Assistant Professor
Reinstein, Leon, MD, Adjunct Clinical Professor
Rodier, Guenael, MD, DTM, Research Associate

Rogers, Audrey Smith, PhD, MPH, Adjunct Research Assistant Professor
Romberg, Elaine, PhD, Professor (Dentistry)
Rosario, Joana A., MD, MPH, Assistant Professor
Rubin, Judith D., MD, MPH, School Associate Professor
Sattler, Barbara, DrPH, Adjunct Assistant Professor
Scherlis, Leonard, MD, Research Professor
Scott, Jean, RN, DrPH, Assistant Professor
Sexton, Mary, PhD, MPH, Professor
Sharkness, Catherine M., MD, Adjunct Assistant Professor
Sherwin, Roger W., MD, Professor
Silbergeld, Ellen, PhD, Professor
Sloan, Michael A., MD, Associate Professor (Neurology)
Stolley, Paul D., MD, MPH, Professor and Chair
Strickland, George T., MD, PhD, Professor
Struewing, Jeffery P., MD, MS, Adjunct Assistant Professor
Summer, Steven J., MBA, Adjunct Assistant Professor
Summerlin, Valerie M., BSN, Adjunct Research Associate
Tayback, Matthew, ScD, Adjunct Professor
Terrin, Michael L., MD, MPH, Adjunct Research Assistant Professor
Warren, John W., MD, Professor (Medicine)
Weis, Kathleen A., PhD, Adjunct Assistant Professor
Werbos, Paul J., PhD, Adjunct Associate Professor
Whitlock, Robert, MS, School Assistant Professor
Wilson, Laura B., PhD, MA, Adjunct Professor
Wilson, Marjorie, MD, Adjunct Professor
Wilson, P. David, PhD, Associate Professor
Woodward, Theodore E., MD, Professor (Emeritus Medicine)
Zimmerly, James G., MD, Adjunct Clinical Associate Professor
Zimmerman, Sheryl I., PhD, Assistant Professor

Department of Family Medicine

Associate Professor and Chair
Herbert L. Muncie Jr., MD

Full-Time Faculty

Barclay, David M. III, MD, MPH, School Assistant Professor
Barnet, Elizabeth, MD, Assistant Professor
Daly, Mel P., MD, School Assistant Professor
Farfel, Phillip F., ScD, Administrator
Ferentz, Kevin S., MD, School Associate Professor
Ferrer, Robert L., MD, MPH, School Assistant Professor
Fredman, Lisa, PhD, Assistant Professor
Hill, C. Earl, MD, Associate Professor
Howard, Daniel, MD, Assistant Professor
Keay, Timothy J., MD, School Assistant Professor
Muncie, Herbert L. Jr., MD, Associate Professor and Chair
Pecukonis, Edward V., MSW, PhD, School Assistant Professor
Richardson, James P., MD, School Associate Professor

Rosenfarb, Charles H., MD, School Assistant Professor
Stewart, David L., MD, MPH, School Associate Professor
Taler, George, MD, School Assistant Professor
Taylor, Gregory H., MD, School Assistant Professor

Part-Time Faculty
Birchess, Damian E., MD, Clinical Assistant Professor
Claudy, Frank, MD, Clinical Assistant Professor
Delgado, Maria E., MD, Instructor
Guyther, J. Roy, MD, Clinical Associate Professor
Hopper, Gayle, MD, Clinical Assistant Professor
Klein, Howard, MD, Clinical Assistant Professor
Lomonico, Paul, MD, Clinical Instructor
Michocki, Robert J., PharmD, School Associate Professor

Volunteers and Preceptors
Adamo, Charles P., MD, Clinical Instructor
Al-Ibrahim, Mohamid, MD, School Associate Professor
Berman, Brian, MD, Clinical Assistant Professor
Bianco, Emidio, MD, Clinical Associate Professor
Bollino, Anthony J., MD, Clinical Assistant Professor
Bosley, James, MD, Clinical Instructor
Coughlin, Robert M., MD, Clinical Instructor
Dailey, Loraine M., MD, Clinical Assistant Professor
Digerolamo, Albert, MD, Clinical Assistant Professor
Domenick, Mark T., MD, Instructor
Duncan, Robert, MD, Clinical Assistant Professor
Forman, Jonathan, MD, Clinical Instructor
Gayle, Michael E., MD, Clinical Instructor
Goedeke, Rebecca A., MD, Clinical Instructor
Goldberg, Andrew, MD, Professor
Goralski, Robert A., MD, Clinical Instructor
Guazzo, Eugene, MD, Clinical Assistant Professor
Hakkarinen, William, MD, Clinical Assistant Professor
Hartmann, Peter, MD, Clinical Associate Professor
Hogan, Kevin, MD, Clinical Instructor
Johnson, Thomas G., MD, Clinical Assistant Professor
Jones-Lukacs, Elizabeth, MD, Clinical Instructor
Kaminski, Mitchell A., MD, Clinical Assistant Professor
Khanna, Niharika, MD, Clinical Instructor
Klapper, Mitchell, MD, Clinical Instructor
Kowalewski, Edward J., MD, Professor Emeritus
Lamm, William D., MD, Clinical Instructor
Lamy, Peter, PhD, ScD, Professor
Lasswell, Anita D., MS, Clinical Instructor
Lewis, Roger A., MD, Clinical Instructor
Loreck, Ellen S., MS, Clinical Instructor
Marino, Christine, MD, Clinical Assistant Professor

Marks, William A., MD, Clinical Instructor
Nallin, Eugene P., Jr., MD, Clinical Instructor
Naumann, Walter K., MD, Clinical Instructor
Niehoff, Michael J., MD, Clinical Assistant Professor
Pasierb, Judith L., MD, Clinical Instructor
Richie, Emily, MD, Clinical Instructor
Riggle, Martha A., MD, Clinical Instructor
Rixey, Sallie, MD, MS, Clinical Assistant Professor
Schwalm, Karl E., MD, Instructor
Smirnow, Lisa, DO, Clinical Assistant Professor
Steinberg, John, MD, Medical School Assistant Professor
Stoltzfus, George B., MD, Clinical Instructor
Valente, Carmine M., PhD, Research Associate Professor
Vazzano, Anthony J., MD, Clinical Assistant Professor
Wagoner, Gary L., MD, Clinical Instructor
Wilson, Larry, MD, Clinical Assistant Professor
Zajano, David, MD, Clinical Assistant Professor
Zebley, Joseph W. III, MD, Clinical Assistant Professor

Medical and Research Technology

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Denise M. Harmening, PhD

Adams, Karen, MA, MT(ASCP), Clinical Instructor
Caldwell, Barbara S., BS, MT(ASCP), Clinical Instructor
Carnahan, Amy, MS(ASCP) Clinical Instructor
Cartwright, Willie, MS, MT(ASCP), School Assistant Professor
Ciesla, Betty, MS, MT(ASCP),School Assistant Professor
Cummings, Patrick J., ScD, MT(ASCP), Assistant Professor
Doucette, Lorraine J., MS, MT(ASCP), Clinical Instructor
Flodstrom, Glenn C., MS, MT(ASCP), School Assistant Professor
Fonong, Tekum, PhD(ASCP), Assistant Professor
Gilman, Allan, MS, MT(ASCP), Clinical Instructor
Goldberger, Bruce A., PhD, Adjunct Assistant Professor
Gregory, Linda C., PhD, MT(ASCP), School Assistant Professor
Harmening, Denise M., PhD, MT(ASCP), CLS(NCA), Professor and Chair
Johnson, Lisa J., MHS, MT(ASCP), Clinical Instructor
Podczasy, John J., PhD, Assistant Professor
Roberts, Chester R., PhD, Adjunct Assistant Professor
Rowland, Sharon, PhD, MT(ASCP), Assistant Professor
Smith, Andrew, PhD, Research Professor
Taghizadeh, Mitra, MS, MT(ASCP), Clinical Assistant Professor
Teel, Louise D., MS, Clinical Instructor
Vucenik, Ivana, PhD, Assistant Professor
Wright, Patricia, BA, MT(ASCP), Clinical Instructor

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Lee, Yu Chen, MD, Medical School Professor Emeritus
Morrison, Samuel, MD, Clinical Associate Professor Emeritus
Scherlis, Leonard, MD, Professor Emeritus
Singleton, Robert T., MD, Associate Professor Emeritus
Snyder, Merrill J., PhD, Research Professor Emeritus
Woodward, Theodore E., MD, Professor Emeritus

Albuquerque, Edson X., MD, PhD, Professor (Pharmacology)
Alevizatos, Aristides C., MD, Clinical Assistant Professor
Amelung, Robert, MD, Clinical Instructor
Applefeld, Mark M., MD, Associate Professor
Argento, Nicholas B., MD, Clinical Assistant Professor
Austin, Perry G., MD, Clinical Instructor
Barbour, Deborah J., MD, Clinical Assistant Professor
Barish, Robert A., MD, Medical School Associate Professor (Surgery)
Bell, Stuart B., MD, Clinical Assistant Professor
Biggs, Richard D., MD, Clinical Instructor
Blaustein, Mordecai P., MD, Professor (Physiology)
Blotzer, J. Wolfe, MD, Clinical Associate Professor
Blume, Michael, MD, Clinical Assistant Professor
Bolgiano, Edward B., MD, Assistant Professor (Surgery)
Boyer, George M., MD, Clinical Assistant Professor
Breza, George, MD, Clinical Assistant Professor
Britten, John S., MD, Medical School Associate Professor (Shock Trauma)
Browne, Brian J. MD, Medical School Associate Professor (Surgery)
Buddemeyer, Edward U., MD, Associate Professor (Diagnostic Radiology)
Buescher, Philip C., MD, Clinical Assistant Professor
Calia, Frank M., MD, Professor and Vice Dean
Chappell, Thomas E., MD, Clinical Assistant Professor
Chodroff, Charles H., MD, Clinical Instructor
Costa, Joseph J., MD, Clinical Instructor
Davidson, William B., MD, Clinical Assistant Professor
Dear, William, MD, Clinical Instructor
Dibos, Pablo E., MD, Clinical Assistant Professor
Dumsha, Susan A., MD, Clinical Instructor
Evelius, John T., MD, Clinical Instructor
Fiscus, Jane A., MD, Clinical Instructor

Fiscus, Wilber G., MD, Clinical Assistant Professor
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Gaber, Jeffrey D., MD, Clinical Assistant Professor
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Geckler, Ronald W., MD, Clinical Associate Professor
Goldscher, David A., MD, Clinical Instructor
Goodman, Jay S., MD, Clinical Professor
Grenzer, Louis E., MD, Clinical Associate Professor
Groleau, Georgina A., MD, Medical School Assistant Professor (Surgery)
Habashi, Nader M., MD, Clinical Instructor (Shock Trauma)
Hanson, Sharon E., PhD, Research Associate Professor
Hartley, Robert G., MD, Clinical Assistant Professor
Heinritz, Colen G., MD, Clinical Assistant Professor
Hijab, Wally S., MD, Clinical Assistant Professor
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Hobbins, Thomas E., MD, Clinical Associate Professor
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Hoffman, Ian B., MD, Clinical Assistant Professor
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Hyle, Michael A., MD, Clinical Instructor
Jacobs, Stuart, MD, Clinical Assistant Professor
Jerrard, David, MD, Instructor (Surgery)
Jiji, Rouben M., MD, Clinical Associate Professor
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Johnston, Gerald S., MD, Professor (Diagnostic Radiology)
Karacuchansky, Miguel, MD, Clinical Assistant Professor
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Kerns, William B., MD, Clinical Instructor
Kimmel, Alan L., MD, Clinical Instructor
Levin, Michael L., MD, Clinical Assistant Professor
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Liberto, Robert T., MD, Clinical Assistant Professor
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Mills, Lawrence E., MD, Clinical Assistant Professor
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Mishkin, David A., MD, Clinical Assistant Professor
Morris, Edward L., MD, Clinical Assistant Professor

Mulholland, John H., MD, Clinical Associate Professor
Murray, Ethelann, MD, Clinical Assistant Professor
Nhamburo, Patson, PhD, Assistant Professor (Pharmacology)
Notarengelo, Joseph D., MD, Clinical Assistant Professor
Olshaker, Jonathan S., MD, Assistant Professor (Surgery)
O'Mahony, Janet M., Clinical Instructor
O'Mansky, Samuel I., MD, Clinical Assistant Professor
Perez-Alard, Jorge, MD, Clinical Instructor
Perpall, Arthur E., MD, Medical School Assistant Professor (Surgery)
Plott, Michael, MD, Assistant Instructor
Randall, William E., MD, Clinical Assistant Professor
Rapoport, Morton I., MD, Professor
Razzak, Ibrahim A., MD, Clinical Assistant Professor
Reichmister, Jerome P., MD, Clinical Associate Professor (Surgery)
Reynolds, H. Neal, MD, Medical School Assistant Professor (Shock Trauma)
Roghmann, Mary Claire, MD, Clinical Instructor
Roig, Ramon, MD, Clinical Assistant Professor
Rollman, Bruce L., MD, Clinical Instructor
Rosenberg, Bruce E., MD, Clinical Instructor
Rosenthal, Linda E., MD, Clinical Assistant Professor
Ruppert, Gary, MD, Clinical Assistant Professor
Rusche, Edward, MD, Clinical Associate Professor
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Schmidt, Marcia C., MD, Clinical Assistant Professor
Shamszad, Mahin, MD, Clinical Assistant Professor
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Sheridan, Martin E., MD, Clinical Instructor
Shocket, Robert B., MD, Clinical Assistant Professor
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Spiggle, Wayne S., MD, Clinical Assistant Professor
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Streyle, Edward H., RN, Clinical Assistant Professor
Taylor, Henry G., MD, Clinical Instructor
Todd, Nevins W., MD, Clinical Assistant Professor
Trommer, Lori L., MD, Clinical Instructor (Surgery)
Tso, Elizabeth, MD, Medical School Associate Professor (Surgery)
Updike, Ralph E., MD, Clinical Assistant Professor
Vassar, Dean L., MD, Clinical Assistant Professor
Weckesser, Barry K., MD, Clinical Instructor
Whipps, Randolph G., MD, Clinical Assistant Professor
Whye, DePriest W., MD, Clinical Assistant Professor (Surgery)
Williamson, Jeffrey D., MD, Clinical Assistant Professor
Wilson, Donald E., MD, Professor and Dean
Winn, Daniel J., MD, Clinical Instructor
Winston, Reed A., MD, PhD, Clinical Assistant Professor (Surgery)
Wolfsthal, Susan D., MD, Medical School Associate Professor
Yen, Michael C.W., MD, Clinical Associate Professor

Yorkoff, Benjamin K., MD, Clinical Assistant Professor
Zolet, David E., MD, Clinical Instructor
Zygler, Samuel, MD, Clinical Assistant Professor

Division of Cardiology

Herbert Berger Professor of Medicine and Head
Robert A. Vogel, MD

Aiello, David B., MD, Clinical Instructor
Alikan, Mahmood, MBBS, Clinical Assistant Professor
Balke, C. William, MD, Associate Professor
Benitez, Roberto M., MD, Medical School Assistant Professor
Bittar, George D., MD, Clinical Assistant Professor
Bustamante, Jose O., PhD, Visiting Associate Professor
Carliner, Nathan H., MD, Medical School Professor
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Corretti, Mary C., MD, Medical School Assistant Professor
Cummings, Charles C., MD, Clinical Assistant Professor
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Fisher, Michael L., MD, Medical School Professor
Froman, Deborah M., RN, Clinical Instructor
Gold, Michael R., MD, PhD, Assistant Professor
Gottlieb, Stephen S., MD, Associate Professor
Gurbel, Paul A., MD, Assistant Professor
Hawke, Mary W., MD, Medical School Assistant Professor
Herzog, William R. Jr., MD, Assistant Professor
Insel, Jerald, MD, Clinical Assistant Professor
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Kircher, Barbara J., MD, Clinical Assistant Professor
Magram, Martin Y., MD, Clinical Assistant Professor
Medalie, G. Robert, MD, Clinical Instructor
Meilman, Henry, MD, Clinical Assistant Professor
Miller, Michael, MD, Assistant Professor
Moran, George W., MD, Clinical Assistant Professor
Morris, Frank H., MD, Clinical Instructor
Mugmon, Marc, MD, Clinical Assistant Professor
Okun, Marc, MD, Clinical Assistant Professor
Oshida, James W., MD, Clinical Instructor
Peters, Robert W., MD, Medical School Professor
Plantholt, Stephen J., MD, Clinical Instructor
Plotnick, Gary D., MD, Medical School Professor
Pollock, Stephen H., MD, Clinical Instructor
Ramirez, Jorge M., MD, Clinical Assistant Professor
Reiber, Johan H.C., PhD, Adjunct Professor
Reilly, Joseph M., MD, Clinical Assistant Professor
Rodriguez, Samuel, MD, Assistant Professor
Roffman, David S., Pharm D, Research Assistant Professor

Saeed, Shahid, MBBS, Clinical Instructor
Salomon, Joseph, MD, Clinical Assistant Professor
Schaeffer, Allen H., MD, Clinical Assistant Professor
Schechter, Ronald D., MD, Clinical Assistant Professor
Sharma, Susheel K., MD, Clinical Assistant Professor
Shorofsky, Stephen R., MD, Assistant Professor
Stafford, J. Lawrence, MD, Medical School Assistant Professor
Sutton, Frederick J., MD, Clinical Associate Professor
Vogel, Robert A., MD, Professor and Head
Zawodny, Robert V., MD, Clinical Assistant Professor
Zimrin, David, MD, Clinical Instructor
Ziskind, Andrew A., MD, Assistant Professor
Zoda, Albert R., MD, Clinical Assistant Professor

Division of Endocrinology

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Allen, Elsie M., MD, Assistant Professor
Carnell, Nathan E., MD, Clinical Instructor
Cheikh, Issam E., MD, Clinical Assistant Professor
Dicke, James A., MD, Clinical Assistant Professor
Donner, Thomas W., MD, Medical School Assistant Professor
Feng, Pei, MD, PhD, Research Assistant Professor
Hamilton, Bruce P., MB, ChB, Professor
Hamilton, Jennifer H., BM, BcH, Medical School Assistant Professor
Janoski, Alfonso H., MD, Clinical Assistant Professor
Kapcala, Leonard P., MD, Associate Professor
Kuzbida, Gregory J., MA, Research Associate
Lash, Robert W., MD, Assistant Professor
Lawrence, George D., MD, Clinical Assistant Professor
Levin, Philip A., MD, Medical School Associate Professor (Pediatrics)
Martin, Luis G., MD, Clinical Associate Professor
Mersey, James H., MD, Clinical Associate Professor
Pavlis, Richard W., MA, Research Associate
Pavlov, Eugenia P., MD, Clinical Assistant Professor
Rivera, Luis E., MD, Clinical Instructor
Valente, William A., MD, Clinical Associate Professor
Wilber, John F., MD, Professor and Head

Division of Gastroenterology

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Stephen P. James, MD

Abraham, John M., PhD, Research Associate
Baum, Richard A., MD, Clinical Associate Professor

Brown, Russell D., MD, Medical School Assistant Professor
Cox, Michael E., MD, Clinical Assistant Professor
Dubin, Ethan H., MD, Clinical Instructor
Dutta, Sudhir K., MBBS, Clinical Professor
Fantry, George T., MD, Medical School Assistant Professor
Fishbein, David M., MD, Clinical Assistant Professor
Goldberg, Neil D., MD, Clinical Assistant Professor
Greenwald, Bruce D., MD, Medical School Assistant Professor
Hofkin, Gerald A., MD, Clinical Assistant Professor
Howell, Charles D., MD, Medical School Associate Professor
James, Stephen P., MD, Professor and Head
Ma, Ann I., MD, Medical School Assistant Professor
Mathieson, Robert D., MD, Clinical Assistant Professor
Meltzer, Stephen J., MD, Associate Professor
Morrison, Stanley A., MD, Clinical Assistant Professor
Nasrallah, Salah M., MD, Clinical Associate Professor
Posner, David B., MD, Clinical Assistant Professor
Raskin, Howard F., MD, Clinical Assistant Professor
Rosen, Gail H., Pharm D, Clinical Instructor
Rutherford, Robin E., MD, Medical School Assistant Professor
Saltzberg, David M., MD, Clinical Assistant Professor
Schreiber, Jonathan B., MD, Clinical Assistant Professor
Williams, Richard B., MD, Clinical Associate Professor
Wilson, Keith D., MD, Assistant Professor

Division of General Internal Medicine

Medical School Assistant Professor and Acting Head
Louis J. Domenici, MD

Amsel, Sheldon, MD, Medical School Associate Professor
Bartman, Barbara J., MD, Medical School Assistant Professor
Brown, David M., MD, Clinical Instructor
Daly, Mel P., MD, Medical School Assistant Professor (Family Medicine)
Davis, Iris L., MD, Medical School Assistant Professor
Dodge, Karin M., MD, Clinical Instructor
Domenici, Louis J., MD, Medical School Assistant Professor and Acting Head
Fairchild, Emily S., MD, Medical School Assistant Professor
Fedele, Denise J., DMD, Clinical Assistant Professor
Felipa, Victor R., MD, Clinical Associate Professor
Ferguson, Robert P., MD, Clinical Associate Professor
Foxwell, Milford M., MD, Medical School Assistant Professor
Goldstein, Norman I., MD, Clinical Assistant Professor
Gordon, Janice L., MS, Research Associate
Hardesty, Daniel C., MD, Clinical Assistant Professor
Havas, Steven W., MD, Medical School Associate Professor (Epidemiology)
Hooper, Frank J., ScD, Research Assistant Professor
Kelemen, Michael H., MD, Clinical Assistant Professor
Keogh, James P., MD, Medical School Associate Professor

Kessler, Irving I., MD, DPH, Professor (Epidemiology)
Kushner, Herbert A., MD, Medical School Associate Professor
Levitt, Alan F., MD, Medical School Assistant Professor
Magaziner, Jay S., PhD, Medical School Associate Professor (Epidemiology)
Marshall, Sandra T., MD, Medical School Assistant Professor
Mathew, Aleyamma J., MD, Clinical Instructor
McDiarmid, Melissa A., MD, Clinical Assistant Professor
McPhillips, James J., MD, Medical School Assistant Professor
Mikdashi, Jamal A., MD, Medical School Assistant Professor
Moy, Ernest M., MD, Assistant Professor
Needleman, Samuel W., MD, Clinical Associate Professor
O'Neill, Joseph F., MD, Clinical Assistant Professor
Oken, Harry A., MD, Clinical Assistant Professor
Parker, Donna L., MD, Medical School Assistant Professor
Randall, Louis N., MD, Clinical Assistant Professor
Schendel, Kevin G., MD, Clinical Instructor
Scott, Jane D., ScD, Adjunct Assistant Professor
Sheehan, Charles E., MD, Clinical Instructor
Sherwin, Roger W., MD, Professor (Epidemiology)
Snow, Dorothy A., MD, Medical School Associate Professor
Souweine, Edward T., MD, Clinical Assistant Professor
Stolley, Paul D., MD, Professor (Epidemiology)
Taler, George A. MD, Assistant Professor (Family Medicine)
Tasker, David J., MD, Medical School Assistant Professor
Troy, Richard E., BSN, Clinical Instructor
Weber, Lawrence D., MD, Medical School Assistant Professor

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Professor and Head
Myron M. Levine, MD, DTPH

Clemens, John D., MD, Research Associate Professor
Clyde, David F., MD, PhD, Research Professor
Davis, Jonathan W., PhD, Research Assistant Professor
Edelman, Robert, MD, Professor
Fasano, Alessio, MD, Associate Professor (Pediatrics)
Formal, Samuel B., PhD, Research Professor
Galen, James S., PhD, Research Assistant Professor
Hone, David M., PhD, Assistant Professor
Kaper, James B., PhD, Professor
Kotloff, Karen L., MD, Associate Professor (Pediatrics)
Lanata, Claudio J., MD, Clinical Assistant Professor
Levine, Myron M., MD, DTPH, Professor and Head
Losonsky, Genevieve S. MD, Medical School Associate Professor (Pediatrics)
Morris, J. Glenn, MD, Professor
Nataro, James P., MD, PhD, Assistant Professor (Pediatrics)
Noreiga, Fernando R., MD, Assistant Professor (Pediatrics)
Perry, Judith, MD, Clinical Assistant Professor (Pediatrics)

Rhead, James, PhD, Psychologist
Robins-Browne, Roy M., MD, PhD, Adjunct Research Professor
Strickland, G. Thomas, MD, PhD, Professor (Microbiology)
Sztein, Marcello B., MD, Associate Professor (Pediatrics)
Tacket, Carol O., MD, Associate Professor
Taylor, David N., MD, Research Associate Professor
Trucksis, Michele M., MD, PhD, Assistant Professor
Walker, Richard I., PhD, Adjunct Professor
Wasserman, Steven S., PhD, Research Assistant Professor
Woodward, William E., MD, Clinical Associate Professor

Division of Gerontology

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Elahi, Dariush, PhD, Research Associate Professor
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Katzel, Leslie, I., MD, PhD, Assistant Professor
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Robbins, David C., MD, Adjunct Professor
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Koutrelakos, Nicholas W., MD, Clinical Assistant Professor
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Schimpff, Stephen C., MD, Professor
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So, Matilda Hop-Won, MD, Clinical Assistant Professor
Tkaczuk, Katherine H., MD, Medical School Assistant Professor
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Will, Marcia L., MD, Medical School Assistant Professor

Division of Hypertension

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Keys, Iris R., MD, Medical School Assistant Professor
Saunders, Elijah, MD, Medical School Associate Professor and Head

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Alexander, Carla S., MD, Clinical Instructor
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Beiser, Claire L., MD, Assistant Professor
Campbell, Wayne S., MD, Medical School Assistant Professor (Shock Trauma)
Caplan, Ellis S., MD, Associate Professor (Shock Trauma)
Cohn, Jonathan A., MD, Assistant Professor
DeTolla, Louis J. Jr., PhD, VMD, Research Associate Professor
Donnenberg, Michael S., MD, Assistant Professor
Furth, Priscilla A., MD, Assistant Professor
Gitterman, Steven R., MD, Adjunct Assistant Professor
Goldblum, Simeon E., MD, Associate Professor
Island, Michael D., PhD, Instructor
Johnson, David E., PhD, Research Associate Professor
Joshi, Manjari, MD, Clinical Assistant Professor (Shock Trauma)
Keay, Susan K., MD, PhD, Assistant Professor
Kleinberg, Micheal E., MD, PhD, Assistant Professor
Lehrer, Robert I., MD, Adjunct Professor
Manzella, John P., MD, Clinical Assistant Professor
Mobley, Harry L.T., PhD, Associate Professor

Oldach, David W., MD, Assistant Professor
Polish, Louis B., MD, Medical School Assistant Professor
Rabinowitz, Ronald P., MD, Clinical Instructor
Rennels, Margaret B., MD, Assistant Professor (Pediatrics)
Schwalbe, Richard S., PhD, Assistant Professor (Pathology)
Tramont, Edmund C., MD, Clinical Professor
Trifillis, Anna L., PhD, Medical School Associate Professor (Pathology)
Walsh, Thomas H., MD, Adjunct Associate Professor
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Wheeler, David A., MD, Assistant Professor

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Light, Paul D., MD, Medical School Associate Professor
Ramos, Emilio, MD, Associate Professor
Sadler, John H., MD, Associate Professor
Shabbaz, Bayinnah, MD, Clinical Assistant Professor
Spar, Brian M., MD, Medical School Assistant Professor
Spital, Aaron, MD, Clinical Assistant Professor
Urbaitis, Barbara, PhD, Research Assistant Professor
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Zemel, Stephen M., MD, Clinical Assistant Professor

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Bleeker, Eugene R., MD, Professor
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Hasday, Jeffrey G., MD, Associate Professor
Rubin, Lewis J., MD, Professor and Head
Silverman, Henry J., MD, Medical School Associate Professor
Teeter, John G., MD, Medical School Assistant Professor
Tod, Mary L., PhD, Assistant Professor
Yuan, Xiao-Jian, MD, PhD, Research Assistant Professor

Division of Rheumatology and Clinical Immunology

Professor and Head
Barry S. Handwerger, MD

Flores, Raymond H., MD, Medical School Assistant Professor
Handwerger, Barry S., MD, Professor and Head
Hochberg, Marc C., MD, Professor
Hornbeck, Peter V., PhD, Assistant Professor
Meyerhoff, John O., MD, Clinical Assistant Professor
Via, Charles S., MD, Associate Professor
White, Barbara MD, Associate Professor

Department of Microbiology and Immunology

Professor and Chair
Jan Cerny, MD, PhD

Professors Emeritus
Fiset, Paul, MD, PhD
Traub, Robert, PhD
Wisseman, Charles L. Jr., MD

Abraham, Kristin M., PhD, Assistant Professor
Ambulos, Nicholas Jr., PhD, Research Assistant Professor
Aurelian, Laure, PhD, Professor
Azad, Abdu F., PhD, Professor
Berman, Jeffrey E., PhD, Assistant Professor
Carbonetti, Nicholas, PhD, Assistant Professor
Cerny, Jan, MD, PhD, Professor and Chair
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Donnenberg, Michael, MD, Assistant Professor
Eylar, Ollie R., PhD, Associate Professor
Feldman, Ricardo A., PhD, Assistant Professor
Freund, Robert, PhD, Assistant Professor
Giannini, M. Suzanne, PhD, Research Associate Professor
Goidl, Edmond A., PhD, Associate Professor
Hadley, Gregg, PhD, Assistant Professor
Handwerger, Barry S., MD, Professor
Hone, David M., PhD, Research Assistant Professor
Hornbeck, Peter V., PhD, Assistant Professor
James, Stephen P., MD, Professor
Kamin-Lewis, Roberta M., PhD, Research Assistant Professor
Kaper, James B., PhD, Professor
Keay, Susan K. F., MD, PhD, Research Associate Professor
Kelsoe, Garnett H., PhD, Professor
Kenny, James J., PhD, Research Associate Professor
Levine, Myron M., MD, PhD, Professor
Lewis, George K., PhD, Professor
Li, Yen, PhD, Associate Professor
Lovchick, Judith C., PhD, Director
Mobley, Harry L. T., PhD, Associate Professor
Myers, William F., PhD, Associate Professor
Nataro, James, MD, PhD, Assistatn Professor

Ordonez, Jose V., MD, Research Assistant Professor
Sacci, John B., PhD, Research Assistant Professor
Sarzotti-Kelsoe, Marcella, PhD, Research Assistant Professor
Schmaljohn, Connie W., PhD, Research Assistant Professor
Schulze, Dan H., PhD, Associate Professor
Shin, Moon, MD, Professor
Silverman, David J., PhD, Professor
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Sztein, Marcelo B., MD, Associate Professor
Thomas, Alan, PhD, Research Assistant Professor
Via, Charles S., MD, Associate Professor
White, Barbara, MD, Associate Professor
Wirtz, Robert A., PhD, Adjunct Research Associate Professor

Department of Neurology

Professor and Chair
Kenneth P. Johnson, MD

Abate, Joseph F., Research Assistant
Acosta, Joseph A., MD, Fellow
Alemayehu, Shimellis, MD, Clinical Instructor
Barry, Elizabeth, MD, School Associate Professor
Bergey, Gregory K., MD, Associate Professor
Berndt, Rita, PhD, Professor
Bever, Christopher Jr., MD, Associate Professor
Culotta, Vincent P., PhD, Clinical Instructor
Custis, Verita R., Research Assistant
Detrich, Terry P., MD, Clinical Assistant Professor
Dhib-Jalbut, Suhayl, MD, Assistant Professor
Drubach, Daniel A., MD, School Assistant Professor
Eckholt, John, MD, Clinical Associate Professor
Elliott, Ellen, PhD, Research Assistant Professor
Feeser, Barbara R., MBA, Research Supv
Fishman, Paul S., PhD, Associate Professor
Flynn, James, MPH, Clinical Professor
Franaszczuk, Piotr J., PhD, Visiting Assistant Professor
Furlow, Thomas W., MD, Clinical Professor
Genut, Abraham A., MD, Clinical Assistant Professor
Gogate, Nitin, MD, Post doctoral Fellow
Good, Janine, MD, School Assistant Professor
Gorman, Peter H., MD, Assistant Professor
Grattan, Lynn M., PhD, School Assistant Professor
Greenwald, Margaret L., PhD, Research Assistant Professor
Hairston, Vernita, MD, Assistant Professor
Hilt, Dana, MD, Clinical Assistant Professor
Hoffman, Paul M., MD, Research Professor
Iqbal, Aleem A., MD, Clinical Assistant Professor
Jackson, Marian J., PhD, Assistant Professor

Jiang, Hong, MD, Fellow
Johnson, Kenneth P., MD, Professor and Chair
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Katz, Eleanor, Assistant
Kelly, Mark P., PhD, School Assistant Professor
Keys, William, MD, PhD, Clinical Instructor
Khurana, Ramesh, MD, Clinical Associate Professor
Kittner, Steven J., MD, Associate Professor
Koch, Thomas K., MD, School Professor
Koski, Carol, MD, Associate Professor
Kramer, Morton, MD, Clinical Assistant Professor
Krumholz, Allan, MD, School Professor
Laser, Kevin, MD, Clinical Assistant Professor
Li, Gingdi, Research Fellow
Macko, Richard F., MD, Assistant Professor
Maher, Michael J., Engineer
Makley, Michael J., MD, Fellow
Malone, Daniel R., PhD, Clinical Assistant Professor
Margulis, Michael, MD, Post Doctoral Fellow
Mattson, Katherine, Research Assistant
Mayer, Richard, MD, Professor
McGhee, Julie, Research Assistant
Miller, Michael S., PhD, Clinical Assistant Professor
Miller, Samuel, MD, Clinical Instructor
Milo, Ron E., Post Doctoral Fellow
Mitchum, Charlotte, Research Supervisor
Mody, Harshad R., MD, Clinical Instructor
Monteiro, Mervyn J., PhD, Assistant Professor
O'Shea, Frank, M., MD, Clinical Instructor
Oleynick, Anatol, MD, Clinical Associate Professor
Panitch, Hillel S., MD, Professor
Price, Thomas, MD, Professor
Pula, T. P., MD, Clinical Assistant Professor
Reggia, James, MD, Research Associate Professor
Reynolds, Gary I., MD, Clinical Assistant Professor
Rismondo-Stankovich, Vivian, MD, Assistant Professor
Robbins, Solomon, MD, Clinical Instructor
Rohwer, Robert G., PhD, Research Associate Professor
Rosario, Joana A., MD, MPH, Assistant Professor
Sawant-Mane, Suneeti, PhD, Research Associate
Schartz, Martin S., MD, Adjunct Assistant Professor
Sellman, Michael, MD, Clinical Assistant Professor
Shelton, Jennifer R., PhD, Post Doctoral Fellow
Silver, Kenneth H.C., MD, Med Sch Associate Professor
Sloan, Michael, MD, Associate Professor
Soovere, Ilo, MD, Clinical Assistant Professor
Soronson, B. M., Administrator
Strauss, Steven, MD, PhD, Assistant Professor

Swoveland, Peggy T., PhD, Research Assistant Professor
Syme, Jackie A., MD, Clinical Assistant Professor
Tang, Cha-Min, MD, Assistant Professor
Taylor, Richard, MD, Clinical Professor
Tippett, Dean S., MD, Clinical Instructor
Toro, Rodrigo, MD, Clinical Associate Professor
Vanguri, Padmavathy, PhD, Research Assistant Professor
Wayland, Sarah C., PhD, Post Doctoral Fellow
Weber, Carol, Director
Weinrich, Michael, MD, Associate Professor
Weisman, Richard, MD, Clinical Instructor
Wozniak, Marcella A., Assistant Professor

Rehabilitation Medicine

Cohen, B. Stanley, MD, Clinical Professor
Felsenthal, Gerald, MD, Adjunct Associate Professor
Goldfine, Lewis, MD, Associate Professor
Kanner, Martin Z., MD, Adjunct Assistant Professor
Palacpac, Leon, MD, Clinical Assistant Professor
Rosen, Norman B., MD, Clinical Assistant Professor
O'Shea, Frank O., MD, School Assistant Professor

Department of Obstetrics and Gynecology

Professor and Chair
M. Carlyle Crenshaw Jr., MD

Abbas, Fouad, MD, Assistant Professor
Adashi, Eli, MD, Professor
Alger, Lindsay Associate Professor
Albrecht, Eugene, PhD, Professor
Barakat, Bassam Y., MD, Assistant Professor
Boughman Joann A., PhD, Professor
Chamoun, Diran, MD, Clinical Instructor
Cohen, Maimon, M., PhD, Professor
Crenshaw, M. Carlyle Jr., MD, Professor and Chair
Decker-Phillips, Martha, MD, Clinical Instructor
Derman, Seth, MD, Clinical Instructor
Dungan, Jeffrey, MD, Assistant Professor
Guzinski, Gay M., MD, Associate Professor
Johnson, Harry W., MD, Associate Professor
Johnson, Harry W. Jr., MD, Assistant Professor
Johnson, Mary Jo, MD, Assistant Professor
Maupin, Robert, MD, Clinical Instructor
McClamrock, Howard, MD, Assistant Professor
Meyers, Carole, MD, Assistant Professor
Mighty, Hugh E., MD, Assistant Professor
Munford, Richard, MD, Associate Professor
Nagey, David, MD, PhD, Associate Professor

Olson, Gayle, MD, Clinical Instructor
Payne, Donna, PhD, Research Assistant Professor
Prenger, Valerie, PhD, Research Assistant Professor
Pupkin, Marcos J., MD, Professor
Rohan, Richard, PhD, Assistant Professor
Shen, Rong-Fong, PhD, Assistant Professor
Smith, Julian, MD, Professor
Stamberg, Judith, PhD, School Associate Professor
Sussman, Daniel J., PhD, Assistant Professor
Wright, John N., PhD, Assistant Professor

Department of Ophthalmology

Professor and Chair
Eve Juliet Higginbotham, MD

Amernick, Stanley J., MD, Clinical Assistant Professor
Aquilla, Joseph B., MD, Clinical Assistant Professor
Armaly, Raya, MD, Clinical Instructor
Baer, John C., MD, Assistant Professor
Benner, Jeffrey D., MD, Clinical Assistant Professor
Brull, Stanley, MD, Clinical Assistant Professor
Bzik, Peter, MD, Clinical Assistant Professor
Cassel, Gary H., MD, Clinical Instructor
Cryer, Theodore, MD, Clinical Assistant Professor
Dankner, Stuart R., MD, Clinical Assistant Professor
Duncan, George W., MD, Clinical Assistant Professor
Elman, Michael J., MD, Clinical Associate Professor
Feinberg, Gilbert N., MD, Clinical Assistant Professor
Gambrill, John Jr., MD, Clinical Assistant Professor
Glaros, Dean S., MD, Clinical Instructor
Glaser, Bert M., MD, Clinical Professor
Glasser, David B., MD, Clinical Associate Professor
Gross, Sharon C., MD, PhD, Research Assistant Professor
Guggenheim, Mark M., PhD, Clinical Assistant Professor
Hameroff, Stephen, MD, Clinical Associate Professor
Hemady, Ramzi K., MD, Assistant Professor
Higginbotham, Eve Juliet, MD, Professor and Chair
Hirsch, Dahlia R., MD, Clinical Assistant Professor
Karesh, James W., MD, Clinical Assistant Professor
Kasper, Lawrence R., MD, Clinical Assistant Professor
Katzen, Brett W., MD, Clinical Instructor
Katzen, Leeds E., MD, Clinical Professor
Kaur, Surinder, MD, Clinical Assistant Professor
Kelman, Shalom E., MD, School Associate Professor
Kessler, Andrew L., MD, Clinical Instructor
Kidwell, Earl, MD, Clinical Assistant Professor
Koh, Shay-Whey, PhD, Research Assistant Professor
Kohlhepp, Paul A., MD, Clinical Assistant Professor

Kolker, Richard J., MD, Clinical Instructor
Lakhanpal, Vinod, MD, Clinical Professor
Lapinsky, Peter T., MD, Clinical Assistant Professor
Leffler, Martha, MD, Clinical Instructor
Lerner, Brian C., MD, Clinical Assistant Professor
Lerner, Renee A., MD, Clinical Instructor
Loeb, Robert A., MD, Clinical Assistant Professor
Meisels, Alfred A., MD, Clinical Assistant Professor
Miller, John, MD, Clinical Instructor
Miller, Kathleen H., MD, Clinical Instructor
Murphy, Robert P., MD, Clinical Associate Professor
Nirankari, Verinder, MD, Clinical Professor
Notarangelo, Vincent M., MD, Clinical Assistant Professor
O'Rourk, Thomas, MD, Clinical Instructor
Parran, Jay N., MD, Clinical Assistant Professor
Perell, Howard F., MD, Clinical Assistant Professor
Preslan, Mark W., MD, Assistant Professor
Ratner, Lois J., MD, Clinical Instructor
Rismondo, Vivian, MD, Clinical Assistant Professor
Rodrigues, Merlyn M., MD, PhD, Professor
Ross, Jerome, MD, Clinical Assistant Professor
Rowen, Sheri L., MD, Clinical Assistant Professor
Schocket, Stanley, MD, Clinical Professor
Sjaarda, Raymond N., MD, Clinical Assistant Professor
Susel, Richard M., MD, Clinical Assistant Professor
Thompson, John T., MD, Clinical Associate Professor
Varma, Shambhu D., PhD, Professor
Waeltermann, Joanne M., MD, Clinical Assistant Professor
Watters, Edward C., MD, Clinical Instructor
Weintraub, Martin J., MD, Clinical Assistant Professor
Winter, Brian J., MD, Clinical Assistant Professor

Department of Pathology

Professor and Chair
Benjamin F. Trump, MD

Adams, John E., MD, Assistant Professor
Ahmed El-Sayed, Mohamed A., Post Doctoral Fellow
Aisner, Seena C., MD, Medical School Associate Professor
Akingbe, Olumide, MS, Clinical Instructor
Ambudkar, Indu, PhD, Adjunct Assistant Professor
Andrews, Jackson C., BS, Research Associate
Anthony, Ronald, PhD, Associate Professor
Arstila, Antti, PhD, Associate Professor
Asanovich, Kristin, Research Assistant
Bahr, Gunter, MD, Clinical Professor
Bansal, Jaya, PhD, Research Assistant Professor
Baskin, Steven I., PhD, Adjunct Professor

Beaty, Theresa L., PhD, Fellow
Beheshti, Firooz, MD, Clinical Assistant Professor
Bennett, Richard O., PhD, Research Assistant Professor
Berezesky, Irene K., Clinical Instructor
Berman, Jules J., PhD, Medical School Associate Professor
Bhagavan, Belur S., MD, Adjunct Assistant Professor
Bobb, Judith K., MS, Research Associate
Borkowski, Andrzej, MD, Research Fellow
Breitenecker, Rudiger, MD, Clinical Assistant Professor
Brinkley, Bill R., PhD, Adjunct Professor
Broadwell, Richard D., PhD, Associate Professor
Brown, Charles C., MD, Clinical Assistant Professor
Brown, Lawrence A., MD, Clinical Assistant Professor
Burken, Mitchell I., MD, Clinical Assistant Professor
Burton, Dennis T., PhD, Adjunct Associate Professor
Cardy, Richard H., DVM, Assistant Professor
Carney, David F., PhD, Research Assistant Professor
Ceniza, Jeorgea A., MD, Research Fellow
Chang, Seung-Han, MS, Clinical Instructor
Chen, Ren-Sheng, MD, Research Associate
Chi, Chun-Min, MD, Research Associate
Cho, Soo-Hun, PhD, Research Associate
Christenson, Robert H., PhD, Associate Professor
Chute, Dennis J., MD, Clinical Instructor
Colburn, Nancy H., PhD, Research Professor
Cole, Katharine, MS, Research Associate
Combs, John W., PhD, Research Associate Professor
Conner, Elizabeth, Post Doctoral Fellow
Constantine, Niel T., PhD, Research Associate Professor
Cook, Janine D., PhD, Adjunct Assistant Professor
Cottrell, John R., MS, Clinical Instructor
Cummings, Benjamin F., MD, Research Associate
Daneshvar, Ali, MD, Clinical Instructor
David, Raffaele, MD, Adjunct Associate Professor
Davis, Myrtle, DVM, PhD, Research Associate
Dawson, Ben R., MD, Professor
DeClaris, Nicholas, ScD, Professor
DeTolla, Louis J. Jr., PhD, VMD, Research Associate Professor
Dhar, Jyotsna K., MD, Clinical Assistant Professor
Dhib-Jalbut, Suhayl, MD, Assistant Professor
Dixon, Ann B., MD, Clinical Assistant Professor
Drachenberg, Cinthia, MD, Assistant Professor
Duh, Show-Hong, PhD, Assistant Professor
Dumler, John S., MD, Assistant Professor
Eddy, Hubert A., PhD, Research Associate Professor
Edelman, Bennett B., MD, Medical School Associate Professor
Eiseman, Julie L., PhD, Research Assistant Professor
Elliget, Kathryn A., MS, Assistant Professor

Fazekas, Victor A., MD, Clinical Assistant Professor
Firman, Jeffrey C., MS, Research Associate
Fowler, Bruce A., PhD, Professor
Fox, Barbara S., PhD, Associate Professor
Fricke, William A., MD, Fellow
Fukushima, Shu, Fellow
Fulton, Amy M., PhD, Associate Professor
Furlong, Maurice B., MD, Clinical Assistant Professor
Gabrielson, Edward W., MD, Research Assistant Professor
Gipson, Thomas G., MD, Clinical Assistant Professor
Goldblatt, Peter J., MD, Clinical Professor
Goldblum, Simeon E., MD, Associate Professor
Golle, Mario F. Jr., MD, Clinical Assistant Professor
Goodin, Julia C., MD, Research Assistant Professor
Goodman, Dawn G., VMD, Adjunct Assistant Professor
Graham, Richard R., MD, Clinical Assistant Professor
Gregory, Linda C., PhD, Research Associate
Griffin, Richard J., Manager
Grimley, Philip Y., MD, Clinical Professor
Gu, Hyangja, PhD, Post Doctoral Fellow
Hafiz, Mohammad, MBBS, Clinical Associate Professor
Hamburger, Anne W., PhD, Professor
Hasday, Jeffrey, MD, Assistant Professor
Heatfield, Barry M., PhD, Research Associate Professor
Henry, Theodore, Research Assistant
Hess, Helene, BA, Research Associate
Hicken, William J., MD, Clinical Associate Professor
Higginson, John, MD, Visiting Professor
Hoffman, Paul M., MD, Research Professor
Hsu, Ih-Chang, PhD, Associate Professor
Iseri, Oscar A., MD, Clinical Professor
Jain, Pramod T., PhD, Research Associate
Jenkins, Robert L., BS, Research Associate
Jiji, Rouben M., MD, Clinical Assistant Professor
Jiji, Violet H., MD, Clinical Assistant Professor
Jockle, Glenn A., MD, Clinical Instructor
Johnson, John P., MD, Assistant Professor
Johnson, Robert J., MD, PhD, Associate Professor
Jones, Raymond, PhD, Associate Professor
Kahng, Myong, PhD, Assistant Professor
Kaiser, Hans E., PhD, Research Professor
Kane, Andrew S., PhD, Assistant Professor
Kao, Grace F., MD, Medical School Professor
Keay, Susan, MD, PhD, Assistant Professor
Kim, Youn-Uck, Post Doctoral Fellow
Kime, Watson P., MD, Adjunct Assistant Professor
Kisner, Harold J., PhD, Clinical Associate
Koch, Thomas R., PhD, Research Associate Professor

Kolaja, Gerald J., DVM, PhD, Research Associate
Koski, Carol L., MD, Research Associate Professor
Kraeuter, John N., PhD, Adjunct Assistant Professor
Kristt, Donald A., MD, Professor
Laiho, Kauno U., MD, Associate Professor
Levine, Barry S., PhD, Clinical Associate Professor
Linberg, Steven E., PhD, Clinical Assistant Professor
Lindado, Ramiro P., MD, Clinical Assistant Professor
Lindberg, Donald A., MD, Adjunct Professor
Lipsky, Michael, PhD, Associate Professor
Liu, Li, MD, Fellow
Locke, James L., MD, Clinical Instructor
Marsella, Richard C., MD, PhD, Adjunct Assistant Professor
Marzella, Liberto, MD, PhD, Associate Professor
Mayrer, Andrew R., MD, Adjunct Assistant Professor
McCarthy, Edward F., MD, Clinical Assistant Professor
McDowell, Elizabeth, PhD, Professor
McMichael, Joseph L., MS, Medical School Assistant Professor
Meltzer, Stephen J., MD, Research Assistant Professor
Mena, Hernando, MD, Clinical Assistant Professor
Merenyi, Denso K., MD, Clinical Associate Professor
Mergner, Wolfgang, MD, PhD, Professor
Moghissi, Alan A., PhD, Research Professor
Moore, William G., MD, PhD, Clinical Associate Professor
Morris, Carolyn, BS, Research Fellow
Morton, Bert, MD, Clinical Assistant Professor
Mostofi, Fathollah, MD, Clinical Professor
Muhvich, Ann G., BA, Research Associate
Na'was, Tarek E., PhD, Visiting Assistant Professor
Needleman, Samuel W., MD, Assistant Professor
Niculescu, Florin I., MD, Instructor
Orbegoso, Carlos M., MD, Clinical Assistant Professor
Oster, Walter F., MD, Clinical Associate Professor
Panigrahi, Pinaki, MD, PhD, Research Assistant Profssor
Papadimitriou, John C., MD, PhD, Assistant Professor
Park, Jongsei, PhD, Clinical Assistant Professor
Passen, Selvin, MD, Adjunct Assistant Professor
Penttila, Matti A., MD, Visiting Associate Professor
Petrucci, John V., MD, Clinical Assistant Professor
Phelps, Patricia C., BA, Clinical Instructor
Platt, William R., MD, Adjunct Assistant Professor
Rasmussen, Peter, MD, Professor Emeritus
Reimschuessel, Renate, DVM, PhD, Assistant Professor
Robbins, Deanna S., PhD, Research Assistant Professor
Robertson, Peter G., PhD, Adjunct Assistant Professor
Rodrigues, Merlyn M., MD, PhD, Professor
Ruegg, Charles E., PhD, Research Assistant Professor
Rus, Horea G., MD, Instructor

Russell, Robert G., DVM, PhD, Research Assistant Professor
Salabes, Audrey R., BS, Research Assistant
Saladino, Andrew, MD, Clinical Associate Professor
Schwalbe, Richard S., PhD, Assistant Professor
Seiguer, Amalia, MD, Adjunct Assistant Professor
Seiguer, Alberto, MD, Adjunct Assistant Professor
Severance, Arthur E. II, Specialist
Shamsuddin, Abulkalam, MD, PhD, Professor
Sheehan, John P., MD, Clinical Assistant Professor
Sherrer, Edward, MD, Clinical Assistant Professor
Shin, Moon, MD, Professor
Silbergeld, Ellen, PhD, Professor
Silverman, David J., PhD, Associate Professor
Smialek, John E., MD, Associate Professor
Smith, Andrew G., PhD, Professor
Smith, Donald R., PhD, Post Doctoral Fellow
Smith, Mary, MS, Clinical Instructor
Sobin, Leslie H., MD, Adjunct Professor
Sorace, James M., MD, Assistant Professor
Sorokin, Sergei P., MD, Adjunct Professor
Sowers, Arthur E., PhD, Research Professor
Squibb, Katherine, PhD, Research Associate Professor
Squire, Robert A., DVM, PhD, Adjunct Professor
Stass, Sanford A., MD, Professor
Sternberger, Ludwig A., MD, Professor
Stout, David A., MD, Clinical Assistant Professor
Sun, Chen-Chih, MD, Medical School Professor
Swoveland, Peggy T., PhD, Research Assistant Professor
Symonds, Daniel A., MD, Clinical Assistant Professor
Taylor, James E., MD, Clinical Associate Professor
Tiamson, Esperanza, MD, Clinical Assistant Professor
Tomazic, Branko, PhD, Research Associate Professor
Trifillis, Anna L., PhD, Medical School Associate Professor
Trump, Benjamin F., MD, Professor and Chair
Valdes-Dapena, Marie, MD, Adjunct Professor
Valerio, Marion G., DVM, Clinical Assistant Professor
Vanguri, Padmavathy, PhD, Research Assistant Professor
Virmani, Renu, MD, Adjunct Professor
Wenk, Robert E., MD, Adjunct Associate Professor
Wood, Colin, MD, Professor Emeritus
Woods, Lewis C. III, PhD, Adjunct Assistant Professor
Wright, Donald G., MD, Clinical Assistant Professor
Yamauchi, Hiroshi, PhD, Post Doctoral Fellow
Yang, Guangyu, MD, PhD, Fellow
Yang, Qiu-Ping, BS, Fellow
Zaman, Abunasar, MD, Clinical Assistant Professor

Department of Pediatrics

Professor and Chair
Michael A. Berman, MD

Professors Emeritus
Bradley, J. Edmund, MD, Professor Emeritus
Clemmens, Raymond, MD, Professor Emeritus
Glick, Samuel S., MD, Professor Emeritus

Ackerman, Alice D., MD, School Associate Professor and Head, Division of Critical Care Medicine
Amato, Stephen, MD, Clinical Professor
Ancona, Robert J., MD, Clinical Assistant Professor
Baffa, Jeanne, MD, Assistant Professor
Banez, Gerard A., PhD, School Assistant Professor
Bellefleur, Monique, MD, School Assistant Professor
Berenson-Howard, Julie, MA, Clinical Instructor
Berg, Patricia, PhD, Research Associate Professor
Berman, Michael A., MD, Professor and Chair
Birenbaum, Howard J., MD, Clinical Assistant Professor
Biswas, Subhasis B., PhD, Associate Professor
Black, Maureen, PhD, Assistant Professor
Blackmon, Lillian, MD, Associate Professor
Blitzer, Miriam, PhD, School Associate Professor
Boscia, John A., MD, Clinical Assistant Professor
Bosma, James F., MD, Research Professor
Bradley, J. Edmund, MD, Professor Emeritus
Brakensiek, Kathleen, M.D., Clinical Assistant Professor
Brenner, Joel, MD, Professor and Head, Pediatric Cardiology
Bright, Robert W., MD, Clinical Associate Professor
Brodell, David R., MD, Clinical Professor
Bromberg, David, MD, Clinical Assistant Professor
Buckmaster, Mark A., MD, Assistant Professor
Cabacungan, Erwin T., MD, Clinical Instructor
Carraccio, Carol, M.D., School Associate Professor and Graduate Director
Chalew, Stuart A., MD, Associate Professor
Chasnow, Marci B., MD, Clinical Assistant Professor
Chinsky, Jeffrey, MD, PhD, Assistant Professor
Clemmens, Raymond, MD, Professor Emeritus
Clevenger-Firley, Ellen, MS, Clinical Instructor
Cohen, Maimon, PhD, Professor and Head, Genetics
Cowan, Tina, PhD, Research Assistant Professor
Counts, Debra R., MD, Assistant Professor
Currey, Kathleen M., MD, School Assistant Professor
Daikoku, Serap O., MD, Clinical Assistant Professor
Davidson, Nelson, MD, Clinical Assistant Professor
Dubowitz, Howard, MD, Associate Professor
Dugan Hammond J. III, MD, Clinical Associate Professor

Dulkerian, Susan J., MD, School Assistant Professor
Ellerbeck, Kathryn A., PhD, Clinical Instructor
Englander, Robert, MD, Assistant Professor
Eskanazi, Allen, MD, Assistant Professor
Farley, John J., MD, Assistant Professor
Fasano, Alessio, MD, Associate Professor and Head, Pediatric Gastroenterology and Nutrition
Feigelman, Susan, MD, Assistant Professor
Feldman, Stephen R., MD, Clinical Assistant Professor
Felice, Marianne E., MD, Professor and Head, Adolescent Medicine
Feroli, Kathy, MS, Clinical Instructor
Fox, Renee E., MD, School Assistant Professor
Frantz, Christopher, MD, Professor and Head, Pediatric Hematology/Oncology
Gadomski, Anne M., MD, Assistant Professor
Gewolb, Ira H., MD, Associate Professor and Head, Neonatology
Gladstein, Jack, MD, School Assistant Professor and Inpatient Director
Glick, Samuel S., MD, Professor Emeritus
Gordon, John B., MD, Assistant Professor
Green, Karl A., MD, Clinical Associate Professor
Gregerson, Karen A., PhD, Assistant Professor
Grossman, Linda E., MD, Clinical Assistant Professor
Gutberlet, Ronald, MD, Associate Professor and Chair, Pediatrics, Mercy Medical Center
Harrington-Mahon, Donna, PhD, Clinical Instructor
Harrison, Susan B., Associate Director
Hart, Lisa, MD, School Assistant Professor
Heald, Felix, M.D., Professor
Heisler, Alice B., MD, School Assistant Professor
Hill, Ivor D., MD, School Professor
Holden, Wayne, PhD, Assistant Professor
Horton, Lisa, MD, Assistant Professor
Hutcheson, Jacqueline, PhD, Clinical Instructor
Hyman, Susan L., MD, School Assistant Professor
Jodorkovsky, Roberto A., MD, School Assistant Professor and Head, Pediatric Nephrology
Kappelman, Murray, MD, Professor and Head, Behavioral and Developmental Pediatrics
Keane, Virginia A., MD, School Assistant Professor
Kenny, Thomas, PhD, Clinical Professor
Khan, Misbah, MD, MPH, Associate Professor
Khan, Tanveer, MD, Clinical Assistant Professor
King, James C., MD, Assistant Professor
Koch, Thomas, MD, Professor and Head, Pediatric Neurology
Kotloff, Karen L., MD, Associate Professor
Kowarski, Allen, MD, Professor and Head, Pediatric Endocrinology
Lavy, Richard C., MD, Clinical Associate Professor
Lawrence, Moira, PhD, Research Associate
Lentz, George, MD, Professor
Levin, Philip A., MD, School Associate Professor
Levine, Myron, MD, DPTH, Professor and Head, Infectious Diseases and Tropical Pediatrics

Li, Xiaoming, PhD, Assistant Professor
Lichenstein, Richard, MD, School Assistant Professor
Lomonico, M. Paul, MD, School Assistant Professor
Losonsky, Genevieve, MD, School Associate Professor
Lovchik, Judith, PhD, Research Assistant Professor
Madden, Joshua, MD, School Assistant Professor
Mayorga, Martha, MD, School Assistant Professor
McKenna, Mary C., PhD, Research Assistant Professor
McLean, Robert, MD, Clinical Professor
Meny, Robert G., MD, School Assistant Professor
Miller, Susan, PhD, Clinical Assistant Professor
Nair, Prasanna, MD, School Professor
Nataro, James P., PhD, Assistant Professor
Naumburg, Eric G., MD, Clinical Assistant Professor
Nitz, Katherine, PhD, School Assistant Professor
Noriega, Fernando, MD, Assistant Professor
O'Brien, Michael J., MD, School Associate Professor and Head, Sudden Infant Death Syndrome
Ostrowski, Debra K., Clinical Instructor
Palmer, Timothy, MD, School Assistant Professor
Parker, Timothy G., Assistant Instructor
Parrish, Margarete, PhD, School Assistant Professor
Parrott, Maureen, MD, Clinical Assistant Professor
Peralta, Ligia, MD, Assistant Professor
Platt, Marvin, Clinical Associate Professor
Rennels, Margaret, MD, Associate Professor
Ricardo, Izabel, PhD, Research Assistant Professor
Ringel, Richard E., MD, School Associate Professor
Roeder, Lois, PhD, Research Associate Professor
Rossman, Maura, MD, Clinical Assistant Professor
Rubenstein, Elaine M., PhD, Clinical Assistant Professor
Ryan, Sheryl, MD, Assistant Professor
Sarles, Richard M., MD, Clinical Professor
Scheel, Janet N., MD, Assistant Professor
Scheller, Joseph, MD, Assistant Professor
Schieken, Lawrence S., MD, Clinical Assistant Professor
Seymour, Jr, Thomas, MD, School Assistant Professor
Shaefer, Sarah J., MS, Clinical Assistant Professor
Shubin, Charles I., MD, School Associate Professor
Sinclair-Hart, Lisa, MD, Assistant Professor
Stanton, Bonita F., MD, Professor and Head, Pediatric Medicine
Stein, Rona L., MD, School Assistant Professor
Sternberger, Nancy, PhD, Professor
Sztein, Marcelo B., MD, Associate Professor
Tepper, Vicki J., MS, School Assistant Professor
Tildon, J. Tyson, PhD, Professor and Head, Pediatric Research
Torday, John S., PhD, School Professor
Tressler, Randall L., MD, School Assistant Professor

Vink, Peter E., MD, School Assistant Professor and Acting Head, Pediatric Immunology/Allergy
Viscardi, Rose Marie, MD, School Associate Professor
Wachtel, Renee, MD, School Associate Professor
Weaver, Karl, MD, Professor
Weber, Deborah, MD, Clinical Assistant Professor
Wells, Gibson, MD, Cl Associate Professor Emeritus
Wollock, Jan, MD, PhD, Assistant Professor
Woodward, Celeste, MD, Clinical Associate Professor
Wulfsberg, Eric A., MD, School Associate Professor
Young, Grace M., MD, School Assistant Professor
Young, Rondall, MD, School Assistant Professor
Young-Hyman, Deborah, PhD, Clinical Assistant Professor
Zielke, Carol, PhD, Research Assistant Professor
Zielke, Horst R., PhD, Associate Professor

Department of Pharmacology and Experimental Therapeutics

Professor and Chair
Edson X. Albuquerque, MD, PhD

Professors Emeritus
Carr, Jelleff C., PhD
Helrich, Martin, MD

Albuquerque, Edson X., MD, PhD, Professor and Chair
Alkondon, Manichavas, PhD, Research Assistant Professor
Anis, Nabil, Research Assistant Professor
Aurelian, Laure, PhD, Professor
Broderick, Raymond, PhD, Assistant Professor
Brodie, Angela, PhD, Professor
Brookes, Neville, PhD, Associate Professor
Bulleit, Robert F., PhD, Assistant Professor
Burt, David, PhD, Associate Professor
Cui, Hong, PhD, Post Doctoral Fellow
Eldefrawi, Amira, PhD, Professor
Eldefrawi, Mohyee, PhD, Professor
Fernando, John C., Post Doctoral Fellow
Frost, Douglas O., PhD, Professor
Goldberg, Steven R., PhD, Adjunct Associate Professor
Goldberg, Donna M., MA, Research Associate
Grollman, Arthur P., MD, Adjunct Professor
Hickey, Robert J., PhD, Adjunct Assistant Professor
Ishihara, Kumatoshi, PhD, Post Doctoral Fellow
Kamatchi, Ganesan L., Post Doctoral Fellow
Katz, Jonathan L., PhD, Adjunct Associate Professor
Kauffman, Frederick, PhD, Adjunct Professor
Kleinschmidt, Ann M., PhD, Adjunct Assistant Professor
Kline, Richard H., Postdoctoral Fellow

Kulka, Michael, PhD, Research Assistant Professor
Larrabee, Martin G., PhD, Adjunct Professor
Li, Ji-song, MS, Postdoctoral Fellow
London, Edythe D., PhD, Adjunct Associate Professor
Malkas, Linda H., PhD, Assistant Professor
Mitchell, Robert F., Administrator
Montes, Joseph G., PhD, Research Assistant Professor
Nhamburo, Patson T., PhD, Assistant Professor
Pan, Su-Shu P., PhD, Research Associate Professor
Pilotte, Nancy, PhD, Adjunct Assistant Professor
Randall, William, PhD, Assistant Professor
Ray, Sugata, PhD, Post Doctoral Fellow
Rice, Kenner C., PhD, Adjunct Professor
Schindler, Charles W., PhD, Research Assistant Professor
Shah, Sanjivkuma R., Post Doctoral Fellow
Shippenberg, Toni S., PhD, Adjunct Associate Professor
Shulin, Huang, Post Doctoral Fellow
Smith, Cynthia C., PhD, Research Assistant Professor
Sokolove, Patricia, PhD, Associate Professor
Spivak, C. E., PhD, Adjunct Assistant Professor
Swanson, Karen L., PhD, Research Assistant Professor
Tavarekere, Nagaraja N., Post Doctoral Fellow
Usherwood, Peter N. R., PhD, Adjunct Professor
Warnick, Jordan E., PhD, Associate Professor
Weinreich, Daniel, PhD, Professor
Yarowsky, Paul, PhD, Research Assistant Professor

Department of Physical Therapy

Associate Professor and Chair
Clarence W. Hardiman, PhD

Alon, Gad, PhD, School Associate Professor
Anderson, Paul A., PhD, School Associate Professor
Bechtel, Roy H., MA, Instructor
Bender, Denise G., Clinical Instructor
Cohen, Susan H., MA, School Assistant Professor
Davis, Katherine, Clinical Instructor
DeDeyne, Patrick, PhD, Assistant Professor
Hardiman, Clarence, PhD, Associate Professor and Chair
Smith, Gerald V., PhD, Assistant Professor
Spezzano, Cheryl T., Clinical Instructor
Waller, Sandra McCombe, MS, Clinical Instructor
Whitall, Jill, PhD, Assistant Professor

Department of Physiology

Professor and Chair
Mordecai P. Blaustein, MD

Professors Emeritus
Barraclough, Charles A., PhD
Smith, Dietrich C., PhD

Adashi, Eli Y., MD,* Professor
Albrecht, Eugene D., PhD,* Professor
Alger, Bradley E., PhD, Professor
Atkins, James L., MD, PhD, Adjunct Assistant Professor
Baitch, Lawrence W., OD, PhD,* Assistant Professor
Balke, William C., MD,* Assistant Professor
Bambrick, Linda L., PhD, Research Associate
Barnas, George M., PhD,* Assistant Professor
Bergey, Gregory K., MD,* Assistant Professor
Berman, Dora M., PhD, Research Associate
Bezakova, Gabriela, PhD, Research Fellow
Blaustein, Mordecai P., MD, Professor and Chair
Bloch, Robert J., PhD, Professor
Bodkin, Noni L., PhD, Research Associate
Borin, Mikhail L., PhD, Research Associate
Brunner, Martha J., PhD,* Assistant Professor
Carlson, Drew E., PhD,* Research Assistant Professor
Cuttle, Matthew F., PhD, Research Fellow
Darlington, Daniel N., PhD,* Assistant Professor
Gann, Donald S., MD,* Professor
Glaser, Edmund M., DEng, Professor
Gold, Michael R., MD, PhD,* Assistant Professor
Goldman, Lawrence, PhD, Professor
Goldman, William F., PhD, Assistant Professor
Golovina, Vera, PhD, Research Fellow
Gonzalez-Serratos, Hugo, MD, PhD,* Professor
Grattan, David R., PhD, Research Fellow
Gregerson, Karen A., PhD,* Assistant Professor
Gu, Xiang Oun, PhD, Research Fellow
Gustafson, Thomas A., PhD, Assistant Professor
Hamlyn, John M., PhD, Associate Professor
Hansen, Barbara C., PhD, Professor
Hotta, Kikuko, PhD, Research Fellow
Jastreboff, Pawel J., PhD,* Professor
Juhaszova, Magdalena, PhD, Research Fellow
Kao, Joseph P.Y., PhD, Assistant Professor
Kapcala, Leonard P., MD,* Associate Professor
Keitz, Paul F., PhD, Research Fellow
Kimura, Keizo, MD, Research Fellow
Kirby, Mark S., PhD, Research Assistant Professor
Koos, Robert D., PhD, Associate Professor
Krueger, Bruce K., PhD, Professor
Lakatta, Edward G., MD, Adjunct Professor
Lederer, W. Jonathan, MD, PhD, Professor

Lopez-Lopez, Jose R., PhD, Research Fellow
Lu, Zhuoren, MD, Research Fellow
Luther, Paul W., PhD, Research Assistant Professor
Mackenzie, Colin F., MD,* Associate Professor
Matteson, Donald R., PhD,* Associate Professor
McCarthy, Margaret M., PhD, Assistant Professor
Ortmeyer, Heidi K., PhD, Research Fellow
Pitler, Thomas A., PhD, Research Assistant Professor
Poehlman, Eric, PhD,* Associate Professor
Ramsay, David J., DM, DPhil, Professor
Rubin, Lewis J., MD,* Professor
Ruchkin, Daniel S., DEng, Professor
Sagrillo, Cathleen A., PhD, Research Fellow
Santiago, Eligio M., DMD, Research Associate
Scher, Malka, PhD, Research Associate
Selmanoff, Michael K., PhD, Professor
Shimizu, Hiroshi, PhD, Research Fellow
Simard, J. Marc, PhD,* Assistant Professor
Sugiyama, Takao, MD, PhD, Research Fellow
Tany, Cha-Min, PhD,* Assistant Professor
Thedford, Sheryl E., PhD, Research Fellow
Tod, Mary L., PhD,* Assistant Professor
Tribe, Rachel M., PhD, Research Fellow
Valdivia, Carmen R., MD, Research Fellow
Valdivia, Hector H., MD, PhD, Research Assistant Professor
Wade, James B., PhD, Professor
Wagner, John J., PhD, Research Fellow
Wang, Sue May, PhD, Assistant Professor
Welling, Paul A., MD, Assistant Professor
Wier, W. Gil, PhD, Associate Professor
Wise, Phyllis M., PhD, Adjunct Professor
Yuan, Xiao-Jian, MD, PhD,* Research Assistant Professor
*Joint Appointments in Physiology

Department of Psychiatry

Professor and Chair
John A. Talbott, MD

Professors Emeritus
Brody, Eugene B., MD
Grenell, Robert, MD
Huffer, Virginia, MD

Adami, Helene, Research Associate
Adams, Margaret, MD, Clinical Assistant Professor
Adler, Samuel, MD, Clinical Assistant Professor
Albert, Patricia C., MS, Research Associate
Albright, Mary J., PhD, Assistant Professor

Alessi, Larry E., MD, Clinical Assistant Professor
Alpern, Frederick, MD, Clinical Assistant Professor
Amsel, Patti, MSW, Clinical Assistant Professor
An Nguyen, James, MD, Clinical Assistant Professor
Anthony, Bruno, PhD, Assistant Professor
Arak, Gladys, MD, Adjunct Assistant Professor
Arenas, Mark, PhD, Clinical Assistant Professor
Ashley, Virginia, MD, Clinical Assistant Professor
Bacharach, Richard, MD, Clinical Assistant Professor
Bacher, Norman, MD, Medical School Assistant Professor
Bachrach, Leona, PhD, Research Professor
Bailey-Kloch, Marie, Research Associate
Baker, F. M., MD, Medical School Associate Professor
Balis, George U., MD, Professor
Ball, John C., PhD, Adjunct Professor
Ball, M. Patricia, Research Associate
Barnett, Jeffrey E., PhD, Clinical Assistant Professor
Barrett, David, MD, Medical School Assistant Professor
Bartko, John, PhD, Research Professor
Bates, Griffin M. Jr., MD, Clinical Assistant Professor
Baynes, Sheila, MSW, Research Associate
Belcher, John, Clinical Assistant Professor
Bell, Leroy, MD, Clinical Instructor
Benson, Paul R., PhD, Medical School Assistant Professor
Berkowitz, Jill, MD, Clinical Assistant Professor
Bielefeld, Joan, MD, Adjunct Assistant Professor
Bierman, Joseph, MD, Clinical Associate Professor
Bisco, Sharon, MD, Medical School Assistant Professor
Bloomestyn, Ellen, PsyD, Research Associate
Blumberg, Neil, MD, Clinical Assistant Professor
Bogrov, Moira, MD, Clinical Instructor
Book, Jonathan, MD, Clinical Assistant Professor
Brandt, Diane K., MS, Faculty Research Assistant
Brandt, Joanna, MD, Clinical Assistant Professor
Breier, Alan, MD, Research Associate Professor
Breslau, Lawrence, MD, Clinical Associate Professor
Buchanan, Robert, MD, Research Assistant Professor
Buhl, Erica, Faculty Research Assistant
Bustillo, Juan R., MD, Fellow
Butchart, John C., MD, Clinical Assistant Professor
Carney, Francis, PhD, Clinical Assistant Professor
Carpenter, William T., MD, Professor
Carr, Neil, MD, Clinical Assistant Professor
Cassady, Shawn, MD, Research Assistant Professor
Clifford, Patricia, Faculty Research Assistant
Cody, Mary, MD, Clinical Assistant Professor
Cohen, George, Assistant Professor
Cohen, Louis, MD, Clinical Assistant Professor

Coleman, Darryl M., Fellow
Collier, Maxie, MD, Clinical Assistant Professor
Collins, Mary, MSW, Research Associate
Conley, Robert, MD, Research Assistant Professor
Connelly, Stephen, Faculty Research Assistant
Conti, Nicholas P., Clinical Assistant Professor
Davis, Barney M. Jr., MD, Adjunct Assistant Professor
Davis, Nathan, MD, Clinical Assistant Professor
Davis, Orlando, MD, Research Assistant Professor
DelRio, Cecilia, MS, Research Associate
Dixon, Lisa, MD, Medical School Assistant Professor
Drubach, Daniel, MD, Clinical Assistant Professor
Drummond, Michael, MSW, Clinical Assistant Professor
Du, Fu, PhD, Research Assistant Professor
Duetsch, Christina, Fellow
Dunkers, Dee, MS, Research Assistant
Durning, Mary, Clinical Instructor
Durruthy, Stephanie, MD, Clinical Assistant Professor
Eastman, Clifford, PhD, Fellow
Ehrenreich, Mark, MD, Medical School Assistant Professor
Eisenberg, Frank, MD, Clinical Assistant Professor
Ellsberry, John, Faculty Research Assistant
Ellsberry, Richard, Faculty Research Assistant
El-Kholy, Nahed, MD, Clinical Assistant Professor
Ephross, Paul, PhD, Clinical Professor
Farhie, Janet, MD, Clinical Instructor
Fauman, Beverly, MD, Medical School Associate Professor
Fauman, Michael, MD, PhD, Medical School Associate Professor
Felice, Marianne E., MD, Clinical Professor
Firth, Pat, MD, Medical School Assistant Professor
Fiscella, Robert, MD, Clinical Assistant Professor
Fitch, Frances, Clinical Assistant Professor
Fitterman, Victor, Clinical Assistant Professor
Flaherty, Lois, MD, Clinical Associate Professor
Fligsten, Kenneth, MD, Clinical Assistant Professor
Forrester, Alfred W., MD, Clinical Assistant Professor
Friedman, Roger S., PhD, Clinical Assistant Professor
Fuller, Michael, Faculty Research Assistant
Gagliardi, Joseph N., MD, Adjunct Assistant Professor
Gallagher, Barbara, Adjunct Assistant Professor
Giannandrea, Paul, MD, Medical School Assistant Professor
Gibbons, John J., PhD, Clinical Assistant Professor
Glaser, Kurt, MD, Clinical Associate Professor
Godenne, Ghislaine, MSW, Clinical Professor
Gold, Alan, MD, Clinical Assistant Professor
Goldberg, Samuel, MD, Clinical Assistant Professor
Goldman, Howard, MD, Professor
Gordon, Charles T., MD, Clinical Assistant Professor

Gorelick, David A., MD, PhD, Adjunct Professor
Gorski, Terence T., Adjunct Assistant Professor
Gounaris, Catherine, BS, Research Associate
Gray, Sheila H., MD, Clinical Professor
Grobaski, Kenneth, BS, Faculty Research Assistant
Gross, Herbert, MD, Clinical Professor
Grubowski, Lauren, BS, Faculty Research Assistant
Grzanna, Reinhard, PhD, Research Professor
Guidette, Paolo, PhD, Research Fellow
Gussak, Deborah, BA, Research Associate
Guttman, Alicia, MD, Clinical Assistant Professor
Haerian, Mohammad, MD, Clinical Assistant Professor
Hagaman, Scott, MD, Clinical Assistant Professor
Hanlon, Thomas, PhD, Research Associate Professor
Hanson, Annette L., MD, Clinical Assistant Professor
Harbin, Henry, MD, Clinical Professor
Hastings, Brian, MD, Medical School Assistant Professor
Heinrichs, Douglas, W., MD, Research Professor
Hepburn, Brian, MD, Clinical Assistant Professor
Herron, John, MSW, Clinical Assistant Professor
Hershfield, Bruce, MD, Clinical Assistant Professor
Hicks, C. William, MD, Clinical Assistant Professor
Hill, Beada H., MD, Medical School Assistant Professor
Hindsman, Robin, PhD, Medical School Assistant Professor
Hoffman, Raymond, MD, Clinical Assistant Professor
Holcomb, Henry, MD, Research Assistant Professor
Hollander, Lisa, MD, Clinical Instructor
Holstein, Constance, MS, Research Associate
Horn, David S., MD, Adjunct Assistant Professor
Horton, Arthur Jr., EdD, Adjunct Assistant Professor
Hunt, Gerard, PhD, Associate Professor
Irish, Donna M, RN, Research Associate
Jaffe, Jerome H., MD, Adjunct Professor
Jahromi, Mahmood, MD, Adjunct Instructor
Jani, Sushma, MD, Clinical Assistant Professor
Janick, Lenna, BA, Faculty Research Assistant
Janofsky, Jeffrey, MD, Clinical Assistant Professor
Jauch, Diana, MD, Research Associate
Jefferies, Michael, MD, Clinical Assistant Professor
Jencks, Stephen, MD, Clinical Associate Professor
Johnson, Jeannette, PhD, Medical School Associate Professor
Kahn, Peter, MD, Clinical Assistant Professor
Kaiser, Theodore, MD, Clinical Associate Professor
Kakigi, Tatsuya, MD, Fellow
Kappelman, Murray M., MD, Professor
Karp, Elaine, PhD, Clinical Assistant Professor
Katz, Debra M., MD, Clinical Assistant Professor
Katz, Julie, MSW, Research Associate

Kaup, Bruce, MD, Medical School Assistant Professor
Keill, Stuart L., MD, Medical School Professor
Kent, Dawn M., Faculty Research Assistant
Khazan, Tanya S., MD, Medical School Assistant Professor
Kim, John, Faculty Research Assistant
Kirkpatrick, Brian, MD, Research Assistant Professor
Klein, Gary A., MD, Clinical Assistant Professor
Knowles, Frederick, MD, Clinical Assistant Professor
Korek, Joan, PhD, Clinical Assistant Professor
Koretzky, Martin B., PhD, Adjunct Assistant Professor
Krajewski, Thomas, MD, Clinical Associate Professor
Kraus, Marilyn F., MD, Clinical Assistant Professor
Kunkel, Richard S., MSW, Research Associate
Kurland, Albert, MD, Research Professor
LaGana, Christine M., PhD, Clinical Assistant Professor
Lahti, Adrienne, MD, Research Assistant Professor
Lahti, Robert, PhD, Research Professor
Lann, Helen, PhD, Clinical Assistant Professor
Lapidus, Nataliya, MD, Research Associate
Laurich, Ivan W., MBBS, Clinical Assistant Professor
Leal, Carol, MD, Medical School Associate Professor
Lehman, Anthony, MD, Associate Professor
Lessey, Robert A., MD, Clinical Assistant Professor
Levin, Leon, MD, Clinical Associate Professor
Levine, Jerome, MD, Research Professor
Levy, Stevan, PhD, Medical School Assistant Professor
Lewis, Anne C., MD, Clinical Associate Professor
Liberto, Joseph, MD, Medical School Assistant Professor
Lion, John, MD, Clinical Professor
Lipkin, John O., MD, Clinical Associate Professor
Locklear, Eileen, PhD, Clinical Assistant Professor
Loewenstein, Richard, MD, Clinical Assistant Professor
Lopez, Stephen, MD, Clinical Instructor
Loreck, David, MD, Medical School Assistant Professor
Love, Lois H., MD, Clinical Assistant Professor
Mallott, David, MD, Medical School Assistant Professor
Manzanera, Elena, Clinical Assistant Professor
Marcus, Lori A., Clinical Instructor
Martinkowski, Thomas, BA, Research Associate Professor
McCann, Merle, MD, Clinical Assistant Professor
McCarthy, Katherine, BS, Faculty Research Assistant
McClelland, Paul, MD, Clinical Assistant Professor
McDuff, David, MD, Medical School Associate Professor
Medoff, Deborah, PhD, Clinical Instructor
Menon, Kumar, PhD, Research Assistant Professor
Merlis, Daniel, Clinical Assistant Professor
Merryman, Mary Beth, Clinical Assistant Professor
Mghir, Rim, MD, Clinical Assistant Professor

Miller, Alan, MD, Clinical Assistant Professor
Modarressi, Taghi, MD, Associate Professor
Monopolis, Spyros, MD, Clinical Assistant Professor
Monroe, Russell R., MD, Professor
Moran, Marianne, Research Associate
Moss, Donald, MD, Clinical Assistant Professor
Munoz-Millan, Robinson, MD, Medical School Assistant Professor
Muneses, Todd, MD, Clinical Instructor
Munson, Robert, Research Associate
Mutin, Alexander, Faculty Research Assistant
Myers, C. Patrick, Research Associate
Myhill, John E., PhD, Clinical Assistant Professor
Nevitt, Jonathan, Faculty Research Assistant
Newton, Erik, BA, Faculty Research Assistant
Norris-Shortle, Carole, ACSW, LCSW, Clinical Assistant Professor
Nurco, David N., Research Professor
O'Brien, Robert P., PhD, Medical School Assistant Professor
O'Callaghan, P. Gayle, PhD, Clinical Assistant Professor
O'Donnell, James, Clinical Instructor
Oglesby, Thomas J., MD, Clinical Assistant Professor
Okum, Marjorie, PhD, Clinical Assistant Professor
Olsson, James, PhD, Clinical Assistant Professor
Oseroff, Charles, MD, Clinical Assistant Professor
Oster, Gerald D., PhD, Clinical Assistant Professor
Paskewitz, David, PhD, Medical School Assistant Professor
Patterson, Raymond F., MD, Medical School Associate Professor
Pecevich, Mark, MD, Medical School Associate Professor
Penna, Manuel, MD, Clinical Associate Professor
Perret, Yvonne, LCSW, Clinical Assistant Professor
Peszke, Michael, MB, BCh, Clinical Professor
Phillips, Jay, MD, Clinical Assistant Professor
Phillips, Sheridan, PhD, Associate Professor
Pinheiro, Marcio, MD, Clinical Assistant Professor
Platman, Stanley R., MD, Clinical Professor
Plaut, S. Michael, PhD, Associate Professor
Purcell, Penelope, Clinical Assistant Professor
Quigley, Joan, Faculty Research Assistant
RachBeisel, Jill, MD, Medical School Assistant Professor
Raphael, Ralph, PhD, Clinical Assistant Professor
Rapoport, Rosalie, Clinical Assistant Professor
Rappoport, Jonas, MD, Clinical Professor
Raskin, Allen, PhD, Research Professor
Rath, Frank H. Jr., PhD, Clinical Assistant Professor
Raymond, Linda, MD, Clinical Assistant Professor
Richardson, Charles M., MD, Clinical Instructor
Ridgely, M. Susan, Research Associate
Roberts, Paul, MD, Clinical Assistant Professor
Roberts, Rosalinda, PhD, Research Assistant Professor

Robinson, Betty, MD, Clinical Associate Professor
Robinson, Charles, MD, Clinical Instructor
Rogers, Marlene E., MD, Clinical Assistant Professor
Rose, Deborah, MD, Clinical Assistant Professor
Ross, David E., MD, Research Assistant Professor
Rothbaum, Kenneth L., MD, Clinical Assistant Professor
Rothlind, Johannes, C., PhD, Assistant Professor
Rubin, Jeffrey, Clinical Instructor
Ruskin, Paul, MD, Clinical Associate Professor
Saidel, Donald H., PhD, Clinical Assistant Professor
Sakles, Constantine J., MD, Medical School Professor
Saloum, Carolyn, Faculty Research Assistant
Sandler, Lawrence, MD, Clinical Assistant Professor
Sanzone, Marla M., PhD, Medical School Assistant Professor
Sarles, Richard, MD, Medical School Professor
Schmitt, Rosemary, Research Associate
Schnaper, Nathan, MD, Clinical Professor
Schoonover, Frances W., MD, Clinical Assistant Professor
Scott, Jack E., Research Assistant Professor
Schwarcz, Robert, PhD, Research Professor
Schwartz, Eugene, Clinical Assistant Professor
Schwartz, Robert P., MD, Medical School Assistant Professor
Sharfstein, Stephen, MD, Clinical Professor
Shepard, Paul, PhD, Research Assistant Professor
Siegel, Brian, PhD, Clinical Assistant Professor
Siegel, Madelyn J., MD, Clinical Assistant Professor
Silver, Stuart B., MD, Clinical Associate Professor
Smith, Camie, BS, Research Associate
Smith, James E. II, MD, Clinical Instructor
Smith, Richard M., MD, Clinical Instructor
Sokal, Dina, MD, Clinical Assistant Professor
Solounias, Bernadette, MD, Medical School Assistant Professor
Spector, Jack, PhD, Clinical Assistant Professor
Spier, Scott, MD, Clinical Assistant Professor
Spodak, Michael, MD, Clinical Assistant Professor
Steinbach, Irvin, Clinical Instructor
Steinberg, John, MD, Clinical Assistant Professor
Stern, Barney J., MD, Clinical Associate Professor
Storch, Daniel, MD, Clinical Assistant Professor
Strahan, Susan T., MD, Clinical Assistant Professor
Styrt, Jerome, MD, Clinical Associate Professor
Summerfelt, Ann, Clinical Instructor
Taghezadeh, Fereidoon, MD, Clinical Assistant Professor
Talbott, John A., MD, Professor and Chairman
Tamminga, Carol, MD, Research Professor
Taylor, Ronald J., MD, Adjunct Assistant Professor
Tellefsen, Christiane, MD, Clinical Assistant Professor
Tepper, Vicki, PhD, Clinical Instructor

Thaker, Gunvant, MD, Research Associate Professor
Thompson, Donald, MD, Clinical Instructor
Thompson, James, MD, Medical School Associate Professor
Tiegel, Stuart, Medical School Assistant Professor
Trazkovich, Lazlo, MD, Clinical Assistant Professor
Twery, Michael, PhD, Research Assistant Professor
Ulgur, Ulku, MD, Clinical Assistant Professor
Urbaitis, John, MD, Clinical Associate Professor
Varghese, Raju, EdD, Clinical Associate Professor
Vimalananda, Meenaksho, MD, Clinical Instructor
Vogel, Michael, PhD, Research Assistant Professor
VonMuehlen, Lutz H., MD, Clinical Assistant Professor
Waddington, Sally-Ann, MD, Clinical Assistant Professor
Waltos, David L., MD, Clinical Assistant Professor
Waltrip, Royce II, MD, Research Assistant Professor
Warfel, Dale, RN, Research Associate
Warres, Neil, MD, Clinical Assistant Professor
Warwick, Arthur M., MD, Clinical Assistant Professor
Waterbury, Marcia, MD, Clinical Assistant Professor
Weiner, Elaine E., MD, Clinical Instructor
Weinstein, Stanley E., PhD, Clinical Associate Professor
Weintraub, Eric, MD, Medical School Assistant Professor
Weintraub, Walter, MD, Clinical Professor
Weiss, Howard D., MD, Clinical Associate Professor
Weist, Mark, PhD, Medical School Assistant Professor
Wells, David R., Faculty Research Assistant
Wells, Jane, MD, Clinical Assistant Professor
White, Robert K., Clinical Assistant Professor
Wimmer, William, MD, Clinical Assistant Professor
Wityk, Robert J, MD, Clinical Instructor
Work, Henry, MD, Clinical Professor
Wu, Hui-Qiu, PhD, Research Assistant Professor
Zaremba, Sandra, Faculty Research Assistant
Zhou, Yawie, MS, Research Associate
Ziesat, Harold, PhD, Adjunct Associate Professor

Department of Radiation Oncology

Professor and Chair
Omar M. Salazar, MD

Amin, Pradip P., MD, School Assistant Professor
Balcer-Kubiczek, Elizabeth, PhD, Associate Professor
Bhandare, Niranjan, MS, Instructor
Blakely, William F., PhD, Adjunct Assistant Professor
Eddy, Hubert A., PhD, Research Professor
Harrison, George, PhD, Associate Professor

Jacobs, Maria C., MD, School Assistant Professor
Lei, Tianhu, PhD, Assistant Professor
Liberman, Fishel Z., MD, PhD, Assistant Professor
MacVittie, Thomas J., PhD, Adjunct Associate Professor
Rhee, Juong G., PhD, Assistant Professor
Salazar, Omar M., MD, Professor and Chair
Sewchand, Wilfred, PhD, Professor
Slawson, Robert, MD, School Associate Professor
Strohl, Roberta A., MS, School Associate Professor
Yaes, Robert J., MD, Assistant Professor

Department of Surgery

Professor and Chair
Anthony L. Imbembo, MD

Division of Emergency Medicine

Associate Professor and Head
Robert A. Barish, MD

Barish, Robert A., MD, Associate Professor and Head
Bissell, Richard A., PhD, Adjunct Assistant Professor
Bolgiano, Edward B., MD, Assistant Professor
Browne, Brian J., MD, Associate Professor
Cadoux, Alexander P., MD, Adjunct Assistant Professor
Cotto-Cumba, Cynthia, MD, Instructor
Doherty, Robert J., MD, Assistant Professor
D'Orta, James A., MD, Clinical Instructor
Eastham, James N., ScD, Adjunct Assistant Professor
Euerle, Brian, MD, Assistant Professor
Floccare, Douglas, MD, Clinical Assistant Professor
Gaasch, Wade R., MD, Assistant Professor
Groleau, Georgina A., MD, Assistant Professor
Jerrard, David A., MD, Assistant Professor
Joffe, Steven L., MD, Clinical Instructor
Kostrubiak, Roman G., MD, Assistant Professor
McPherson, Scott J., MD, Assistant Professor
Morhaim, Daniel K., MD, Clinical Instructor
Mysko, William K., DO, Clinical Assistant Professor
Olshaker, Jonathan S., MD, Associate Professor
Perpall, Arthur E. Jr., MD, Assistant Professor
Pimentel, Laura, MD, Assistant Professor
Rolnick, Michael, MD, Assistant Professor
Rorison, David G., MD, Clinical Assistant Professor
Scott, Carol J., MD, Clinical Assistant Professor
Seaman, Kevin G., MD, Instructor
Trommer, Lori L., MD, Instructor
Tso, Elizabeth L., MD, Associate Professor
Walker, Benjamin A., MD, Clinical Instructor

Whye, Depriest W. Jr., MD, Clinical Assistant Professor
Weddle, Michael G., MD, Clinical Instructor
Winston, Reed A., MD, PhD, Clinical Assistant Professor
Witting, Michael D., MD, Instructor

Division of General Surgery
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George H. Yeager, MD

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Bartlett, Stephen T., MD, Associate Professor
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Buchbinder, Dale, MD, Clinical Professor
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Elias, E. George, MD, PhD, Professor
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Flinn, William R., MD, Professor
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Gens, David R., MD, Assistant Professor
Graham, Scott M., MD, Assistant Professor
Gudwin, Arthur L., MD, Clinical Assistant Professor
Hadley, Gregg A., PhD, Assistant Professor
Hall, Gregory M., MD, Clinical Instructor
Harrison, Miles G. Jr., MD, Clinical Assistant Professor
Imbembo, Anthony L., MD, Professor and Chair
Johnson, Lynt B., MD, Assistant Professor
Killewich, Lois A., MD, Assistant Professor
King, A. Daniel Jr., MD, Clinical Assistant Professor
Lefor, Alan T., MD, Assistant Professor
Lerman, Sheldon H., MD, Clinical Instructor
Levine, Hilbert M., MD, Clinical Assistant Professor
Lilly, Michael P., MD, Associate Professor
Macon, William L., MD, Clinical Associate
Militello, Philip R., MD, Assistant Professor
Minken, Stanley L., MD, Clinical Assistant Professor
Mir, Sidney S., MD, Clinical Associate Professor
Munster, Andrew M., MD, Clinical Associate Professor
Myers, Roy A. M., MD, Assistant Professor
Novin, Neil, MD, Clinical Associate Professor
Padussis, Constantine J., MD, Clinical Associate

Ramsey, Harold E., MD, Clinical Instructor
Raneri, Anthony J., MD, Clinical Assistant Professor
Rodriguez, Aurelio, MD, Assistant Professor
Schnaper, Lauren A., MD, Assistant Professor
Schwartzentruber, Douglas J., MD, Clinical Assistant Professor
Schweitzer, Eugene J., MD, Assistant Professor
Scovill, William A., MD, Professor
Silva, John S., MD, Adjunct Associate Professor
Singer, John A., MD, Clinical Assistant Professor
Smith, Gardner W., MD, Clinical Professor
Smoot, Roy T., MD, Clinical Instructor
Soderstrom, Carl A., MD, Assistant Professor
Steers, John A., MD, Instructor
Stump, Kyle C., DVM, Assistant Professor
Szczypinski, Adam F., MD, Clinical Assistant Professor
Toy, Frederick K., MD, Clinical Instructor
Vachon, Debra A., MD, Clinical Instructor
Wiles, Charles E., MD, Assistant Professor
Wolpert, Seth I., MD, Instructor

Division of Neurological Surgery

Professor and Head
Howard M. Eisenberg, MD

Professor Emeritus
Thompson, Raymond K., MD

Abbott, J. Douglas, MD, Clinical Instructor
Abdo, Hatem S., MBBCh, Clinical Instructor
Aldrich, Christo G., MD, Visiting Assistant Professor
Aldrich, E. Francois, MD, Associate Professor
Cook, David M., MD, Clinical Instructor
Ducker, Thomas B., MD, Clinical Professor
Eisenberg, Howard M., MD, Professor and Head
Fiandaca, Massimo S., MD, Clinical Assistant Professor
Geisler, Fred H., MD, PhD, Clinical Assistant Professor
Giorgi, Cesare, MD, Visiting Assistant Professor
Hennessy, Robert G., MD, Clinical Instructor
Jamaris, Joseph K., MD, Clinical Instructor
Knoller, Nachshon, MD, Visiting Assistant Professor
Lancelotta, Charles J., MD, Clinical Assistant Professor
Layne, Edward D., MD, Clinical Instructor
Levin, Harvey S., PhD, Professor
Mellion, B. Theo, MD, Clinical Instructor
Meyer, Paul D., MD, Clinical Instructor
Meyer, William J., MD, Clinical Assistant Professor
Ordonez, Jorge R., MD, Clinical Instructor
Ragheb, John, MD, Clinical Instructor

Robinson, Walker L., MD, Associate Professor
Russo, G. Lee, MD, Clinical Assistant Professor
Shuey, Henry M. Jr., MD, Clinical Instructor
Simard, J. Marc, MD, Associate Professor
Sitaras, Panayiotis L., MD, Clinical Instructor
Soliman, Joseph A., MD, Clinical Assistant Professor
Tewari, Kirti P., PhD, Assistant Professor
Weiner, Israel H., MD, Clinical Assistant Professor

Division of Surgical Critical Care

Professor and Head
Donald S. Gann, MD

Carlson, Drew E., PhD, Associate Professor
Cooper, Carnell, MD, Assistant Professor
Darlington, Daniel N., PhD, Assistant Professor
Evans, John A., PhD, Assistant Professor
Gann, Donald S., MD, Professor and Head
Simpkins, Cuthbert O., MD, Assistant Professor
Smith, Thomas R., MD, Assistant Professor

Division of Orthopaedic Surgery

Professor and Head
John E. Kenzora, MD

Abrams, Robert C., MD, Clinical Associate Professor
Apostolo, Paul M., MD, Clinical Assistant Professor
Baugher, William H., MD, Clinical Assistant Professor
Becker, Larry, MD, Clinical Assistant Professor
Belkoff, Stephen M., PhD, Assistant Professor
Brumback, Robert J., MD, Clinical Associate Professor
Burgess, Andrew R., MD, Assistant Professor
Ciotola, Joseph A., MD, Clinical Instructor
Cohen, Phillip M., DPM, Clinical Instructor
Copeland, Carol E., MD, Assistant Professor
Curcin, Aleksandar, MD, Assistant Professor
Diamond, Eric L., DPM, Clinical Associate
Diamond, Liebe S., MD, Clinical Associate Professor
Edwards, Charles C., MD, Professor
Eglseder, W. Andrew, MD, Assistant Professor
Ellis, Michael A., MD, Clinical Assistant Professor
Engh, Charles A., MD, Clinical Assistant Professor
Engh, Gerard A., MD, Clinical Assistant Professor
Fedder, Ira L., MD, Clinical Instructor
Friedler, Stanley, MD, Clinical Assistant Professor
Gillespie, Thomas E., MD, Assistant Professor
Greenstein, George H., MD, Clinical Assistant Professor
Herzenberg, John E., MD, Associate Professor

House, Homer C., MD, Clinical Assistant Professor
Jinnah, Riyaz H., MD, Clinical Associate Professor
Kenzora, John E., MD, Professor and Head
Lenet, Marc D., DPM, Clinical Assistant Professor
Levine, Alan M., MD, Professor
Matz, Samuel O., MD, Clinical Instructor
Michael, Roger H., MD, Clinical Associate Professor
Murphy, James C., MD, Clinical Instructor
Paley, Dror, MD, Associate Professor
Reichmeister, Jerome P., MD, Clinical Associate Professor
Rosenthal, Mark S., MD, Clinical Assistant Professor
Schmeisser, Gerhard, Jr., MD, Clinical Associate Professor
Sherman, Michael M., DPM, Clinical Assistant Professor
Silberstein, Charles, MD, Clinical Assistant Professor
Simmons, Shelton C., III, DMD, MD, Clinical Instructor
Smulyan, William I., MD, Clinical Instructor
Sothoron, W. Haddox, MD, Clinical Assistant Professor
Spence, Kenneth F., MD, Clinical Instructor
Sydney, Sam V., MBBS, Clinical Instructor
Tansey, John J., MD, Clinical Associate Professor
Tetsworth, Kevin D., MD, Assistant Professor
Topaleski, Tim, PhD, Adjunct Assistant Professor
Turen, Clifford H., MD, Assistant Professor
von Kessler, Kirby, MD, Clinical Assistant Professor
Whitten, Thomas V., MD, Clinical Instructor
Zadek, Robert E., MD, Clinical Associate Professor
Zhu, Wenhu, PhD, Adjunct Assistant Professor

Division of Otolaryngology-Head and Neck Surgery

Professor and Head
Douglas E. Mattox, MD

Professor Emeritus
Blanchard, Cyrus L., MD

Baker, Dole P., MD, Clinical Assistant Professor
Bialostozky, Franklin M., Clinical Assistant Professor
Biedlingmaier, John F., MD, Assistant Professor
Blackston, Marilyn L., MD, Clinical Instructor
Blum, Stanley L., MD, Clinical Instructor
Cicci, Regina L., PhD, Assistant Professor
Clayton, Marco, MD, PhD, Clinical Instructor
Clayton, Robert, MD, Clinical Instructor
Cosentino, Enzo, MD, Clinical Assistant Professor
Flowers, Brian K., MD, Assistant Professor
Fletcher, Margaret M., MD, Clinical Associate Professor
Gray, William C., MD, Associate Professor
Hazell, Jonathan W. P., MBBChir, Visiting Professor

Jastreboff, Malgorzata M., PhD, Assistant Professor
Jastreboff, Pawel J., PhD, Professor
Khan, Ahsan S., MD, Clinical Instructor
Kleiman, Lee A., MD, Clinical Instructor
Leveque, Hubert, MD, Clinical Assistant Professor
Mattox, Douglas E., MD, Professor and Head
Ominsky, Barry E., MD, Clinical Assistant Professor
Pardo, Juan M., MD, Clinical Instructor
Sawyer, Robert, MD, Associate Professor
Sklarew, Eric C., MD, Clinical Instructor
Steiner, Albert, MD, Clinical Assistant Professor
Suter, Charles M., PhD, Assistant Professor
Toner, Thomas J. Jr., Clinical Instructor

Division of Plastic and Reconstructive Surgery

Professor and Head
Nelson H. Goldberg, MD

Ballesteros, Reuben F., MD, Clinical Assistant Professor
Carlton, James M., MD, Assistant Professor
Clark, Norman L., MD, Assistant Professor
Crawley, William A., MD, DDS, Clinical Instructor
Franks, Denis, MD, Clinical Associate
Goldberg, Nelson H., MD, Professor and Head
Grace, George T., MD, Clinical Assistant Professor
Hill, Terri L., MD, Clinical Instructor
Hirata, Richard M., MD, Clinical Assistant Professor
Hoopes, John E., MD, Clinical Professor
Klatsky, Stanley A., MD, Clinical Assistant Professor
Manson, Paul N., MD, Clinical Professor
Mayer, Michael H., MD, Clinical Instructor
McClinton, Michael A., MD, Clinical Assistant Professor
Orlando, Joseph C., MD, Clinical Assistant Professor
Plasse, Jerome S., MD, Clinical Assistant Professor
Ramirez, Oscar M., MD, Clinical Assistant Professor
Ringelman, Paul R., MD, Clinical Instructor
Robertson, Bradley C., MD, Assistant Professor
Saunders, John R. Jr., MD, Clinical Assistant Professor
Slezak, Sheri, MD, Assistant Professor
Spence, Robert J., MD, Clinical Assistant Professor
Vanderkolk, Craig A., MD, Clinical Assistant Professor
Weiss, Alan J., MD, Clinical Instructor
Wilhelmsen, Hans R., MD, Clinical Assistant Professor
Wong, Leslie, MD, Clinical Instructor

Division of Surgical Services for Infants and Children

Professor and Head
J. Laurance Hill, MD

Buck, James R., DVM, MD, Clinical Assistant Professor
Colombani, Paul M., MD, Clinical Assistant Professor
Haller, J. Alex Jr., MD, Clinical Professor
Hill, J. Laurance, MD, Professor and Head
Paidas, Charles N., MD, Clinical Assistant Professor
Pegoli, Walter, MD, Clinical Assistant Professor
Voigt, Roger W., MBBCh, Assistant Professor

Division of Thoracic and Cardiovascular Surgery

Professor and Head
Joseph S. McLaughlin, MD

Attar, Safuh, MD, Professor
Bartle, Bryan K., MD, Assistant Professor
Cardarelli, Marcelo G., MD, Assistant Professor
Foster, Andrew H., MD, Assistant Professor
Krasna, Mark J., MD, Assistant Professor
Leacock, Ferdinand S., MD, Clinical Instructor
McLaughlin, Joseph S., MD, Professor and Head
Mech, Karl F. Jr., MD, Clinical Instructor
Sell, Jeffrey E., MD, Clinical Assistant Professor
Sequeira, Alejandro J., MD, Assistant Professor
Turney, Stephen Z., MD, Associate Professor

Division of Urology

Professor and Head
Stephen C. Jacobs, MD

Professor Emeritus
Young, John D. Jr., MD

Alexander, Richard B., MD, Associate Professor
Applestein, Marc B., MD, Clinical Instructor
Berger, Bruce W., MD, Clinical Assistant Professor
Bergmann, Frederick G., MD, Clinical Instructor
Bezirdjian, Lawrence C., MD, Clinical Assistant Professor
Brodie, Ray Jr., MD, Clinical Instructor
Brown, Michael W., MD, Clinical Instructor
Burger, Robert H., MD, Clinical Assistant Professor
Busky, Stephen M., MD, Clinical Instructor

Campbell, Edward W. Jr., MD, Professor
Cherry, Joel M., MD, Clinical Assistant Professor
Cohen, Stephen P., MD, Clinical Associate Professor
Dhanda, Anand M., MBBS, Clinical Instructor
Epstein, Edwin S., MD, Clinical Instructor
Filderman, Peter S., MD, Assistant Professor
Galleher, Earl P., MD, Clinical Associate Professor Emeritus
Gearhart, John P., MD, Adjunct Associate Professor
Gessler, Robert A., MD, Clinical Instructor
Harne, Gary F., MD, Clinical Instructor
Howard, Ralph M., MD, Clinical Assistant Professor
Jacobs, Stephen C., MD, Professor and Head
Jaskulsky, Stephen R., MD, Clinical Instructor
Jeffs, Robert D., MD, Adjunct Professor
Kalash, Suhayl S., MD, Clinical Associate Professor
Kaplan, Harold J., MD, Clinical Assistant Professor
Kramer, Howard C. Jr., MD, Clinical Assistant Professor
Kyprianou, Natasha, PhD, Assistant Professor
Lerner, Brad D., MD, Clinical Instructor
Mamo, George J., MD, Clinical Instructor
Naslund, Michael J., MD, Assistant Professor
Patel, Shashikant S., MD, Clinical Instructor
Redwood, Stanley M., MD, Clinical Instructor
Schonwald, Harvey N., MD, Clinical Instructor
Sclama, Anthony O., MD, Clinical Instructor
Shaw-Taylor, Kofi E., Clinical Instructor
Shpritz, Louis A., MD, Clinical Assistant Professor
Singh, Bhupinder, MD, Clinical Instructor
Smith, Harry W., MD, Clinical Instructor

Internships and Residencies—Class of 1992

Anesthesiology

Maryland (5)
U. Maryland Medical Center
Johns Hopkins Hospital

Out of State (3)
George Washington-D.C.
Georgetown-D.C.
U. New Mexico

Diagnostic Radiology

Maryland (0)

Out of State (8)
U. Virginia
Duke University-NC
Medical College of Virginia
St. Joseph Mercy
St. Elizabeth-Youngstown-OH
U. New Mexico
U. Arizona

Emergency Medicine

Maryland (3)
U. Maryland Medical Center

Out of State (5)
Medical Center of Delaware-Newark
U. Chicago-IL
McGaw Medical Center-IL
Wright Patterson AFB
U. Illinois-Chicago

Family Practice

Maryland (7)
Franklin Square
U. Maryland Medical Center

Out of State (11)
York Hospital-PA
Providence Hospital-D.C.
Lancaster General-PA
U. Virginia
Fairfax Family Practice Center
Forbes Family Practice-PA
St. Margaret-PA
Riverside Medical Center
Central Texas Medical
San Jose Medical Center

Internal Medicine

Maryland (23)
Francis Scott Key
Greater Baltimore Medical Center
Mercy Medical Center
Sinai Hospital
Union Memorial
U. Maryland Medical Center

Out of State (36)
Washington Hospital Center-D.C.
Georgetown-D.C.
York Hospital-PA
Medical College of Pennsylvania
Medical College of Virginia
Emory University-GA
Dartmouth-Hitchcock-NH
St. Mary's Hospital-Rochester, NY
Long Island Jewish-NY
NYU Medical Center-NY
George Washington-D.C.
U. Hospital of Cleveland-OH
U. Chicago-IL
Barnes Hospital-MO
Indiana University
Boston City Hospital-MA
University Hospital-MA
U. Texas-Southwestern-Dallas
U. Florida Medical Center-Shands Hospital
U. Florida Health Science Center/JAX
East Tennessee State-Johnson City
New York Hospital-Cornell
U. New Mexico
St. Mary's Hospital-CA

Neurology

Maryland (1)
U. Maryland Medical Center

Out of State (2)
U. Southern California
Georgetown University-D.C.

Neurosurgery

Maryland (0)

Out of State (2)
U. Southern California
Montreal Neurological Institute

Obstetrics and Gynecology

Maryland (3)
U. Maryland Medical Center
Greater Baltimore Medical Center
Bethesda Naval Hospital

Out of State (2)
George Washington-D.C.
Washington Hospital Center-D.C.

Ophthalmology

Maryland (1)
U. Maryland Medical Center

Out of State (3)
Massachusetts Eye and Ear Hospital
U. Virginia
Washington Hospital Center-D.C.

Orthopedics

Maryland (2)
U. Maryland Medical Center
Johns Hopkins Hospital

Out of State (3)
Ohio State University
Bowman Gray/NC Baptist
University Health Center-Pittsburgh

Otolaryngology

Maryland (0)

Out of State (2)
Mayo Grad School of Medicine-MN
Thomas Jefferson-PA

Pathology

Maryland (0)

Out of State (1)
Kaiser Permanente-San Francisco-CA

Pediatrics

Maryland (6)
U. Maryland Medical Center
Johns Hopkins Hospital

Out of State (13)
Children's National Medical-D.C.
Children's Hospital-Philadelphia-PA
Vanderbilt University-TN
U. Florida Medical Center-Shands
U. South Florida-Tampa
U. Arizona
Baylor College of Medicine-Houston-TX
U. California-Los Angeles
U. Chicago-IL
U. Cincinnati-OH

Psychiatry

Maryland (1)
Sheppard Pratt

Out of State (3)
U. North Carolina
Yale-New Haven-CT
U. Colorado

Radiation Oncology

Maryland (0)

Out of State (1)
Cooper Hospital/RW Johnson-NJ

Physical Medicine and Rehabilitation

Maryland (1)
Sinai Hospital

Out of State (0)

Surgery

Maryland (7)
U. Maryland Medical Center
Union Memorial Hospital
Bethesda Naval Hospital

Out of State (11)
Geisinger Medical Center-PA
Thomas Jefferson-PA
Pennsylvania Hospital-PA
Bridgeport Hospital-CT
LSUMC-Shreveport
U. Puerto Rico
Richland Memorial Hospital-SC
U. South Florida-Tampa
U. California-San Diego
Washington Hospital Center
Eisenhower Army Hospital

Transitional

Maryland (0)

Out of State (1)
York-PA

Urology

Maryland (0)

Out of State (1)
Texas A&M Scott and White-TX

Internships and Residencies—Class of 1993

Anesthesiology

Maryland (4)
Johns Hopkins Hospital
U. Maryland Medical Center

Out of State (5)
Albany Medical College-NY
George Washington U. Hosp-D.C.
Presbyterian Hospital-NY
University Health Center-Pittsburgh-PA

Diagnostic Radiology

Maryland (1)
U. Maryland Medical Center

Out of State (5)
Emory U. School of Medicine-GA
Hospital of U. Pennsylvania
Milton S. Hershey Med Ctr-Penn State
U. Chicago Hospitals-IL
U. Minnesota Hosp & Clinic

Emergency Medicine

Maryland (1)
U. Maryland Medical Center

Out of State (8)
Bowman Gray School of Medicine-NC
Denver General Hospital-CO
Harbor-UCLA Medical Center-CA
McGaw Med Ctr Northwestern U.-IL
Thomas Jefferson U.-PA
U. Health Center of Pittsburgh-PA
U. Cincinnati-OH
York Hospital-PA

Family Practice

Maryland (3)
Franklin Square Hospital
U. Maryland Medical Center

Out of State (13)
Baylor College of Medicine-Houston-TX
Ft. Gordon Eisenhower Med Ctr-GA
Lancaster General Hospital-PA
Medical College of Georgia
Middlesex Hospital-CT
North Colorado Med Ctr-Greeley-CO
Providence Hospital-D.C.
Spartanburg Regional Med Ctr-SC
Tripler Army Medical Center-HI
U. Florida/Alachua General Hospital
U. South Alabama Medical Center
York Hospital-PA

Internal Medicine

Maryland (23)
Bethesda Naval Hospital
Franklin Square Hospital
Greater Baltimore Med Ctr

Out of State (39)
Beth Israel Hospital-Boston-MA
Boston U.-MA
Duke U. Medical Center-NC
Emory U. School of Medicine-GA
George Washington U. Hospital-D.C.
Georgetown U. Med Ctr-D.C.
Good Samaritan Regional Med Ctr-AZ
Indiana U. Med Ctr
Jewish Hospital of St Louis-MO
Memorial Medical Center-GA
Milton S. Hershey Medical Center-PA
Mt. Sinai Medical Center-Miami-FL
Naval Hospital-Oakland-CA
New England Deaconess Hospital-MA
North Shore U. Hosp-NY
St. Joseph Hospital-Denver-CO
St. Mary Hospital/Medical Ctr-CA

Strong Memorial Hospital-NY
The Graduate Hospital-PA
U. Health Center of Pittsburgh
U. Alabama Hospital
U. Colorado Sch of Med-Denver
U. Florida-Shands
U. Virginia-Charlottesville
U. Washington Affiliated Hospitals
U. North Carolina
U. Utah
Vanderbilt U. Medical Center-TN
Washington Hospital Center-D.C.
West Virginia U. Hospitals
York Hospital-PA

Neurology

Maryland (0)

Out of State (2)
Duke U. Med Ctr-NC
Emory U.-Atlanta-GA

Obstetrics and Gynecology

Maryland (2)
Franklin Square Hospital
U. Maryland Medical Center

Out of State (5)
Emory U.-Atlanta-GA
McGaw Med Ctr-Northwestern U.-IL
Medical Center H.-VT
Medical Center of Delaware-Newark
U. Medical Center-North Carolina

Ophthalmology

Maryland (1)
U. Maryland Medical Center

Out of State (2)
U. Pittsburgh-PA
Washington Hospital Center-D.C.

Orthopedics

Maryland (2)
U. Maryland Medical Center

Out of State (2)
Medical U. South Carolina
Yale-New Haven Hospital-CT

Pathology

Maryland (0)

Out of State (2)
Dartmouth-Hitchcock Med Center-NH
Hospital U. Pennsylvania

Pediatrics

Maryland (4)
Sinai Hospital of Baltimore
U. Maryland Medical Center

Out of State (8)
Baylor College of Medicine-Houston-TX
Baystate Medical Center-MA
Children's National Med Ctr-D.C.
Children's Hospital of Philadelphia-PA
Children's Hospital-Oakland-CA
Strong Memorial Hospital-NY
U. California-Los Angeles Medical Center

Psychiatry

Maryland (3)
Sheppard Pratt Hospital
U. Maryland Medical Center

Out of State (4)
New York U. Medical Center
St. Elizabeth's Hospital
U. Health Center of Pittsburgh-PA
U. Minnesota Hospital and Clinic

Radiation Oncology

Maryland (1)
U. Maryland Medical Center

Out of State (1)
MD Anderson-TX

Physical Medicine and Rehabilitation

Maryland (0)

Out of State (1)
National Rehab Hospital-D.C.

Research

Maryland (4)
National Institutes of Health
U. Maryland Medical Center

Out of State (0)

Surgery

Maryland (1)
U. Maryland Medical Center

Out of State (14)
Baystate Medical Center-MA
Boston U. Hospital-MA
Healtheast Teaching Hospital-PA
LAC USC Medical Center-CA
Long Island Jewish Med Ctr-NY
Medical College of Georgia
Temple U. Hospital-PA
Medical College of PA
U. Hospital of Cleveland-OH
U. Illinois at Chicago
U. North Carolina
Washington Hospital Center-D.C.

Transitional

Maryland (0)

Out of State (2)
Portsmouth Naval Hospital-VA
York Hospital-PA

Urology

Maryland (1)
U. Maryland Medical Center

Out of State (0)

Internships and Residencies—Class of 1994

Anesthesiology

Maryland (1)
Johns Hopkins Hospital

Out of State (2)
Duke U. Medical Center-NC
U. California-San Francisco

Diagnostic Radiology

Maryland (0)

Out of State (5)
Brigham & Women's Hospital-MA
LA County-USC Medical Ctr-CA
Medical Center of Delaware
Thomas Jefferson U.-PA
U. Chicago Hospitals-IL

Emergency Medicine

Maryland (4)
U. Maryland Medical Center

Out of State (9)
Carolinas Medical Center
Eastern Virginia Grad Sch of Med
Henry Ford Hospital-MI
New York U. Medical Ctr-NY
SUNY Health Science Center- NY
UC-SD Medical Center-CA
U. Texas Med Sch Affil-Houston
York Hospital-PA

Family Practice

Maryland (3)
Franklin Square Hospital
U. Maryland Medical Center

Out of State (8)
Abington Memorial Hospital
Dewitt Army Comm Hospital
Lancaster General Hospital-PA
Medical Center of Delaware
St. Mary's Hospital & Med Ctr-CO
U. Massachusetts Medical Ctr
York Hospital-PA

Internal Medicine

Maryland (20)
Francis Scott Key Medical Center
Mercy Med Ctr/U. Maryland
Sinai Hospital of Baltimore
U. Maryland Medical Center

Out of State (18)
Duke U. Medical Center-NC
George Washington U.-D.C.
Kaiser Permanente Med Ctr-CA
Mayo Clinic-Siebens
Stanford U. Medical Ctr-CA
U. Hospital of Cleveland-OH
U. Alabama Hospital
U. Florida
U. North Carolina
U. Pittsburgh
U. Virginia
Walter Reed Medical Center
York Hospital-PA
Baylor College of Medicine

Neurology

Maryland (1)
U. Maryland Medical Center

Out of State (0)

Obstetrics and Gynecology

Maryland (5)
Franklin Square Hospital
Greater Baltimore Medical Center
Sinai Hospital of Baltimore
U. Maryland Medical Center

Out of State (5)
Hahnemann U. Hospital-PA
Medical Center of Delaware
Mount Sinai Hospital-CT
U. Health Ctr of Pittsburgh-PA
U. Tennessee College of Medicine

Ophthalmology

Maryland 2)
Friedenwald/Maryland General
Sinai Hospital of Baltimore

Out of State (3)
Boston U.-MA
Cleveland Clinic-OH
Penn State U.-Hershey

Orthopedic Surgery

Maryland (1)
U. Maryland Medical Center

Out of State (3)
Boston U. School of Medicine-MA
U. Florida Health Science Ctr/Jacksonville
U. Wisconsin

Pathology

Maryland (0)

Out of State (2)
George Washington U. Hospital-D.C.
Medical College of Virginia

Peace Corps

Maryland (0)

Out of State (1)

Pediatrics

Maryland (3)
U. Maryland Medical Center
Johns Hopkins Hospital

Out of State (11)
Baylor College of Medicine-TX
Boston City Hospital-MA
Presbyterian Hospital-NY
St. Christopher's Hospital-PA
St. Louis Children's Hospital
U. Miami/Jackson Mem Med Ctr-FL
U. Eastern NC Medical Center
U. North Carolina
Yale-New Haven Hospital-CT
Strong Memorial Hospital-NY

Physical Medicine and Rehabilitation

Maryland (0)

Out of State (1)
Medical College of Virginia

Psychiatry

Maryland (4)
Sheppard Pratt Hospital
U. Maryland Medical Center

Out of State (2)
Duke U. Medical Center-NC
New York U. Medical Center

Research

Maryland (0)

Out of State (3)

Surgery

Maryland (2)
U. Maryland Medical Center

Out of State (14)
Case Western Res. Int Prgm-OH
Cedars-Sinai Medical Center-CA
Louisiana State U.
M. S. Hershey Medical Center-PA
Massachusetts General Hospital-MA
Medical College of Virginia
Montefiore Medical Center-NY
St. Mary's Hospital-CT
SUNY HSC Brooklyn Affil. Hosps.-NY
U. Chicago Hospitals-IL
U. Florida
U. South Florida
Washington Hospital Center-DC

Transitional

Maryland (0)

Out of State (4)
Mercy Hospital & Med Center-CA
York Hospital-PA

Urology

Maryland (0)

Out of State (1)
Milton South Hershey Med Ctr-PA

University Policy Statements

FACULTY, STUDENT AND INSTITUTIONAL RIGHTS AND RESPONSIBILITIES FOR ACADEMIC INTEGRITY

Preamble

The academic enterprise is characterized by reasoned discussion between student and teacher, a mutual respect for the learning and teaching process, and intellectual honesty in the pursuit of new knowledge. By tradition, students and teachers have certain rights and responsibilities which they bring to the academic community. While the following statements do not imply a contract between the teacher or the institution and the student, they are nevertheless conventions which should be central to the learning and teaching process.

I. Faculty Rights and Responsibilities

A. Faculty members shall share with students and administrators the responsibility for academic integrity.

B. Faculty members shall enjoy freedom in the classroom to discuss subject matter reasonably related to the course. In turn, they have the responsibility to encourage free and honest inquiry and expression on the part of students.

C. Faculty members, consistent with the principles of academic freedom, have the responsibility to present courses that are consistent with their descriptions in the catalog of the institution. In addition, faculty members have the obligation to make students aware of the expectations in the course, the evaluation procedures and the grading policy.

D. Faculty members are obligated to evaluate students fairly, equitably and in a manner appropriate to the course and its objectives. Grades must be assigned without prejudice or bias.

E. Faculty members shall make all reasonable efforts to prevent the occurrence of academic dishonesty through appropriate design and administration of assignments and examinations, careful safeguarding of course materials and examinations, and regular reassessment of evaluation procedures.

F. When instances of academic dishonesty are suspected, faculty members shall have the responsibility to see that appropriate action is taken in accordance with institutional regulations.

II. Student Rights and Responsibilities

A. Students share with faculty members and administrators the responsibility for academic integrity.

B. Students have the right of free and honest inquiry and expression in their courses. In addition, students have the right to know the requirements of their courses and to know the manner in which they will be evaluated and graded.

C. Students have the obligation to complete the requirements of their courses in the time and manner prescribed and to submit to evaluation of their work.

D. Students have the right to be evaluated fairly, equitably, and in a timely manner appropriate to the course and its objectives.

E. Students shall not submit as their own work any work which has been prepared by others. Outside assistance in the preparation of this work, such as librarian assistance, tutorial assistance, typing assistance or such special assistance as may be specified or approved by the appropriate faculty members, is allowed.

F. Students shall make all reasonable efforts to prevent the occurrence of academic dishonesty. They shall by their own example encourage academic integrity and shall themselves refrain from acts of cheating and plagiarism or other acts of academic dishonesty.

G. When instances of academic dishonesty are suspected, students shall have the right and responsibility to bring this to the attention of the faculty or other appropriate authority.

III. Institutional Responsibility

A. Constituent institutions of the University of Maryland System shall take appropriate measures to foster academic integrity in the classroom.

B. Each institution shall take steps to define acts of academic dishonesty, to ensure procedures for due process for students accused or suspected of acts of academic dishonesty, and to impose appropriate sanctions on students found to be guilty of acts of academic dishonesty.

C. Students expelled or suspended for reasons of academic dishonesty by any institution in the University of Maryland System shall not be admissible to any other System institution if expelled, or during any period of suspension.

Approved, November 30, 1989 by the Board of Regents.

CONFIDENTIALITY AND DISCLOSURE OF STUDENT RECORDS

It is the policy of the University of Maryland at Baltimore to adhere to the Family Educational Rights and Privacy Act (Buckley Amendment). As such, it is the policy of the university (1) to permit students to inspect their education records, (2) to limit disclosure to others of personally identifiable information from education records without students' prior written consent and (3) to provide students the opportunity to seek correction of their education records where appropriate. Each school shall develop policies to ensure that this policy is implemented.

SCHEDULING OF ACADEMIC ASSIGNMENTS ON DATES OF RELIGIOUS OBSERVANCE

It is the policy of the University of Maryland at Baltimore to excuse the absence(s) of students that result from the observance of religious holidays. Students shall be given the opportunity, whenever feasible, to make up, within a reasonable time, any academic assignments that are missed due to individual participation in religious observances. Opportunities to make up missed academic assignments shall be timely and shall not interfere with the regular academic assignments of the student. Each school/academic unit shall adopt procedures to ensure implementation of this policy.

ELIGIBILITY TO REGISTER AT UMAB

A student may register at UMAB when the following conditions are met: (1) the student is accepted to UMAB, (2) the student has received approval from the unit academic administrator and (3) the student has demonstrated academic and financial eligibility.

REVIEW OF ALLEGED ARBITRARY AND CAPRICIOUS GRADING

It is the policy of the University of Maryland at Baltimore that students be provided a mechanism to review course grades that are alleged to be arbitrary or capricious. Each school/academic unit shall develop guidelines and procedures to provide a means for a student to seek review of course grades. These guidelines and procedures shall be published regularly in the appropriate media so that all faculty and students are informed about this policy.

THE UNIVERSITY OF MARYLAND POSITION ON ACTS OF VIOLENCE AND EXTREMISM WHICH ARE RACIALLY, ETHNICALLY, RELIGIOUSLY OR POLITICALLY MOTIVATED

The Board of Regents strongly condemns criminal acts of destruc-tion or violence against the person or property of others. Indi-viduals committing such acts at any campus or facility of the university will be subject to swift campus judicial and personnel action, including possible expulsion or termination, as well as possible state criminal proceedings.

SERVICE TO THOSE WITH INFECTIOUS DISEASES

It is the policy of the University of Maryland at Baltimore to provide education and training to students for the purpose of providing care and service to all persons. The institution will employ appropriate precautions to protect providers in a manner meeting the patients' or clients' requirements, yet protecting the interest of students and faculty participating in the provi-sion of such care or service.

No student will be permitted to refuse to provide care or service to any assigned person in the absence of special circumstances placing the student at increased risk for an infectious disease. Any student who refuses to treat or serve an assigned person without prior consent of the school involved will be subject to penalties under appropriate academic procedures, such penalties to include suspension or dismissal.

HUMAN RELATIONS CODE SUMMARY

The University of Maryland at Baltimore has a Human Relations Code for use by the entire campus community. The code represents UMAB's commitment to human relations issues. The specific purposes of the code include:

1. Prevention or elimination of unlawful discrimination on the basis of race, color, creed, sex, sexual orientation, marital status, age, ancestry or national origin, physical or mental handicap, or exercise of rights secured by the First Amendment of the U.S. Constitution; and

2. Establishing a timely, effective grievance procedure as an alternative to more lengthy formal processes for resolution of human relations issues.

A Human Relations Committee was created to oversee the code. It is comprised of campus faculty, administrators and students and is advisory to the president of the campus. The committee may institute educational programs and provide an open forum on human relations issues. In addition, the committee is charged with maintaining a mediation, investigation and hearing process for specific complaints of discrimination brought by students, faculty or staff. The code describes the particulars of the hearing process. It is the intent of the code to provide a grievance procedure for an individual on campus who wants a cross-section of the campus community to investigate and mediate a problem without having to resort to complaints to external agencies such as the Maryland Commission on Human Relations, complaints under personnel rules or lawsuits.

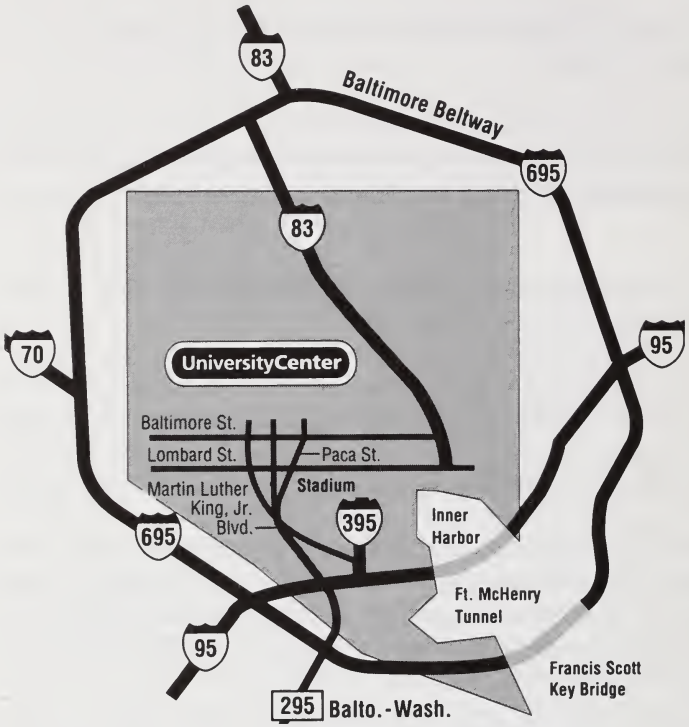
Copies of the Human Relations Code are available in the dean's office, the student affairs and USGA offices in the Baltimore Student Union, and the human resources management and affirmative action offices in the administration building.

DISCLAIMER

No provision of this publication shall be construed as a contract between any applicant or student and the University of Maryland at Baltimore. The university reserves the right to change any admission or advancement requirement at any time. The university further reserves the right to ask a student to withdraw at any time when it is considered to be in the best interest of the university.

Admission and curriculum requirements are subject to change without prior notice.

Campus and Area Maps



TO REACH THE CAMPUS

The University of Maryland at Baltimore is located in UniversityCenter, a newly designated downtown Baltimore neighborhood, six blocks west of the Inner Harbor.

Directions
From I-95: Take Rte. 395 (downtown Baltimore) and exit onto Martin Luther King Jr., Blvd., staying in right lane. At fourth traffic light, turn right onto Baltimore St. Turn left at second traffic light onto Paca St. (get into right lane) and enter the Baltimore Grand Garage (on your right).

Bus Access
MTA buses numbered 1, 2, 7, 8, 11, 20, 35 and 36 all stop in the campus area.

Subway Access
The Baltimore Metro runs from Charles Center to Owings Mills. Stops closest to campus are at Lexington Market and Charles Center.

Light Rail
A new light rail line connects park and ride locations at Timonium, Lutherville, Falls Road and Mt. Washington in northern Baltimore and the new Oriole Park at Camden Yards and then south of Baltimore to Glen Burnie. The line passes two blocks east of the campus; the UniversityCenter stop is at Baltimore and Howard Streets.

Train
MARC commuter service runs from Camden Station, 301 West Camden Street.

UniversityCenter Area, University of Maryland at Baltimore

VP Visitors Parking DP Dental Patient Parking PP Patient Parking SP Student Parking PO Parking Office

Academic and Patient Care Facilities

19 Administration Building
737 West Lombard Street

17 Allied Health Building
100 Penn Street

13 Athletic Center
646 West Pratt Street

12 Baltimore Student Union
621 West Lombard Street

37 Biomedical Research Building
108 North Greene Street

38 Walter P. Carter Center
630 West Fayette Street

7 Davidge Hall
522 West Lombard Street

31 Dental School
666 West Baltimore Street

22 Dunning Hall
636 West Lombard Street

8 East Hall
520 West Lombard Street

20 Environmental Health and Safety Building
714 West Lombard Street

1 James T. Frenkil Building
16 South Eutaw Street

6 Greene Street Building
29 South Greene Street

28 Health Sciences Facility
685 West Baltimore Street

10 Health Sciences Library
111 South Greene Street

42 Hope Lodge
636 West Lexington Street

26 Howard Hall
660 West Redwood Street

36 Information Services Building
100 North Greene Street

33 Law School and Marshall Law Library
500 West Baltimore Street

9 Lombard Building
511 West Lombard Street

35 Maryland Bar Center
520 West Fayette Street

18 Medical Biotechnology Center
721 West Lombard Street

27 Medical School
Frank C. Bressler Research Building
655 West Baltimore Street

29 Medical School Teaching Facility
10 South Pine Street

15 Nursing School
655 West Lombard Street

24 Parsons Hall
622 West Lombard Street

40 Pascault Row
651-655 West Lexington Street

30 Pharmacy School
20 North Pine Street

41 Pine Street Police Station
214 North Pine Street

39 Ronald McDonald House
635 West Lexington Street

5 Social Work School
525 West Redwood Street

14 State Medical Examiner's Building
111 Penn Street

4 University Plaza
Redwood and Greene Streets

21 Western Health Center
700 West Lombard Street

23 Whitehurst Hall
624 West Lombard Street

2 405 West Redwood Street Building

16 701 West Pratt Street Building

11 University Health Center
120 South Greene Street

25 University of Maryland Medical System
22 South Greene Street

3 University of Maryland Professional Building
419 West Redwood Street

32 Veterans Affairs Medical Center
Baltimore and Greene Streets

Cultural and Civic Facilities

46 Babe Ruth Birthplace-Baltimore Orioles Museum

48 Dr. Samuel D. Harris National Museum of Dentistry (opening 1996)

44 Lexington Market

43 Market Center Post Office

47 Old Saint Paul's Cemetery

45 Oriole Park at Camden Yards

34 Westminster Hall

Parking Facilities

VP Baltimore Grand Garage (visitors)

DP Dental Patient Parking Lot (dental patients)

SP Lexington Garage (students)

PP University Plaza Garage (patients and patient transporters)

P Public Parking Facilities

Assigned University Parking

A Koester's Lots

B Pearl Garage/Parking Office

C Penn Street Garage (opening 1994)

D Pratt Street Garage

E Other assigned parking areas

UNIVERSITY OF MARYLAND
AT BALTIMORE

Student Right-to-Know and Campus Security Act Request

The Student Right-to-Know and Campus Security Act (Public Law 101-542), signed into federal law November 8, 1990, requires that the University of Maryland at Baltimore make readily available to its students and prospective students the information listed below.

Should you wish to obtain any of this information, please check the appropriate space(s), fill in your name, mailing address and UMAB school name, tear off this form and send it to:

University Office of Student Affairs
Attn: Student Right-to-Know Request
University of Maryland at Baltimore
Suite 336, Baltimore Student Union
621 West Lombard Street
Baltimore, MD 21201

Complete and return this portion

- ☐ Financial Aid
- ☐ Costs of Attending the University of Maryland at Baltimore
- ☐ Refund Policy
- ☐ Facilities and Services for Handicapped
- ☐ Procedures for Review of School and Campus Accreditation
- ☐ Completion/Graduation Rates for Undergraduate Students
- ☐ Loan Deferral under the Peace Corps and Domestic Volunteer Services Act
- ☐ Campus Safety and Security
- ☐ Campus Crime Statistics

Name _____

Address _____

_____

UMAB School and Program _____

UNIVERSITY OF MARYLAND
AT BALTIMORE